ACT | The App Association

Testimony
of Morgan Reed
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in
"There's an App for That: Trends in Mobile Technologies"
before the

Senate Committee on Commerce, Science, and Transportation
Subcommittee on Communication, Technology, Innovation, and the Internet

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253 Russell Senate Office Building

Executive Summary

Chairman Wicker, Ranking Member Schatz, and distinguished members of the Subcommittee, thank you for the opportunity to share our views in this important hearing. My name is Morgan Reed and I am president of ACT | The App Association, a trade association representing more than 5,000 app makers and connected device companies in a $950 billion industry. This testimony represents an abbreviated review of our 2018 State of the App Economy report.

Smartphones have become the single most rapidly adopted technology in human history, outpacing innovations like the printing press and the steam engine. In just ten years, apps have changed the phones, devices, and "things" we use every day. Mobile is quite literally everywhere in your life. Your doctor, your bank, and even your church, can reach you where you are through mobile tech and access to the cloud.

In less than a decade, the marriage of mobile and cloud has opened a new world for 3.4 billion people. By providing access to 10,000 years of human creativity—from ancient scrolls to crop reports to diagrams of distant galaxies and cat videos—the smartphone brings the entire world to our fingertips, and apps enable us to engage with it.

A) How it Works

Before outlining a few examples of the benefits the app economy brings, I want to give an overview of how the modern app economy works. Gone are the days when developers created a piece of software, placed it on a CD, shipped it in a box to a retail store, and hoped consumers would notice it on the shelf at a CompUSA. Today, with access to broadband and the cloud, software developers can reach a global market instantaneously through trusted platforms. The app economy is based on four major tenets:

1) Access to the global marketplace. The global digital economy gives app companies access to more potential clients or customers than just those in their immediate neighborhood, which helps keep prices low. To maintain access to this global marketplace, we encourage the Subcommittee to continue to promote digital trade and the cross-border flows of data.

2) Customer trust. Consumers' trust in a mobile software company's products and services is inextricably linked to the company's ability to protect proprietary information and data. Encryption and other technical measures are important pieces of the security puzzle. Our member companies are dedicated to building the strongest protection mechanisms possible. But mandating a backdoor into an app requires the company to build a known vulnerability into its product. Any of our small app companies will tell you that if a vulnerability is known to exist, hackers and other motivated parties will attack until they find it. It's that simple.

3) Overhead offload to platforms and cloud providers. Access to the cloud has drastically reduced startup costs. One App Association member recently recounted that in the late '90s, a software company had to spend about $10 million just to get up and running. Now, the advent of free or inexpensive cloud services, internet connectivity, and software tools enables startups to be initially funded with just a $100,000 check. Moreover, the many cloud and platform companies shoulder the costs of privacy measures, security, and intellectual property protections for their users, freeing up large amounts of capital that startups and small firms need to build and grow their business.

4) Connectivity to the network. Without this fundamental necessity, none of the three pillars of the app economy described above are possible. The benefits of the "mobile plus cloud"-driven ecosystem would never exist. Our companies now rely heavily on the always-on reliability of mobile internet connections to access the cloud and reach their customers.

B) Apps Support Businesses and Create Jobs

While the apps that live as colorful icons on your smartphone continue to thrive, they are also revolutionizing business operations and efficiency in America in our "mobile plus cloud"-driven world. In fact, two out of three businesses use mobile enterprise apps for communication, company training, and other activities. Our companies develop the apps that connect the cash register to the sales department, to the shipping department, and all the way to the line supervisor at the manufacturing plant. For American businesses, mobile is no longer a luxury or a "value add," it is a necessity for them to have constant, reliable mobile connectivity.

It's no surprise that the app economy is one of our nation's leading employers, creating well-paying jobs in your states. The app economy employs 4.7 million workers with an average salary of $86,000—nearly double the national average—and is poised to create another 440,000 jobs for the U.S. workforce by 2024. Over this period, computing jobs are expected to grow by 12.4 percent in Mississippi and 6.4 percent in Hawai'i. These are the jobs of today and the ones that will harness analytics, artificial intelligence, and blockchain to create better products and services for American industries in the future.

Healthcare is a particularly telling example. Mobile software has completely revolutionized the way providers reach patients in Mississippi and across the country. The University of Mississippi Medical Center is a steering committee member of the App Association's Connected Health Initiative and was recently named a Telehealth Center of Excellence by HHS. As their executive director Michael Adcock testified in this Subcommittee last year, UMMC had recorded more than 500,000 patient visits since the Telehealth Center's establishment in 2003. Residents in 53 of Mississippi's 82 counties live more than a 40-minute drive from specialty care, but UMMC's telehealth services bring healthcare services patients in their homes, without sacrificing quality of care. Healthcare providers were able to reach more patients than ever in a program that has the potential to save the state $189 million in Medicaid dollars.

C) Connectivity is Essential

The UMMC example illustrates why broadband connectivity is so important for all Americans. Without a broadband connection, many are closed off from the world of opportunity and efficiency provided by the app economy. Being a "have-not" in today's mobile economy is an increasingly significant disadvantage but shockingly, almost 20 million rural Americans still lack access to broadband internet. That's equivalent to the entire population of New York.

Local and federal policies that streamline the approval and siting of 5G equipment are essential to putting higher-speed connections at Americans' fingertips. The App Association applauds the work this Subcommittee has done to create an environment that promotes 5G deployment and mobile broadband competition, from the Spectrum Act in 2012 to the MOBILE NOW Act passed this year. The uses of such a powerful network are still making themselves known, but they will add to the 28 billion app-enabled internet of things (IoT) devices already on the network.

Yet as we surge ahead in more densely populated areas where small-cell deployments are feasible, we must use a mix of models including licensed and unlicensed spectrum deployments to reach unconnected Americans in more rural areas. We encourage this Subcommittee to urge the Federal Communications Commission (FCC) to make good on its plans to carve out broadband uses among the repacked broadcast channels. This unused spectrum, referred to as "TV white spaces," is even more important as broadband connectivity is increasingly integral to every facet of our lives—from participation in the workforce, access to education, or reaching our healthcare providers.

D) Apps in Action

Just as mobile software has improved and extended healthcare services, it has empowered first responders to be in the right place at the right time with the right equipment. The volcano eruptions and earthquakes that have devastated Hawai'i have posed a dangerous challenge to local first responders, who risk their own safety to protect others. But mobile software helps first responders be more effective and safe when responding to these life-threatening events. In fact, our member company DroneSense provides a software platform for drones to assist public safety officials and first responders in a variety of situations, including natural disasters.

A growing number of mobile software makers are using artificial intelligence (AI) to streamline their products and services. For example, member company RevTwo, based in Boston, Massachusetts, uses AI to automate customer support for a diverse client list spanning from e-commerce companies to industrial machines. For small companies, AI can be a valuable and accessible tool, but only when they can access powerful processors, reliable broadband connections, and big data sets. Policies that overly restrict the beneficial uses of data or slow down network deployment are detrimental to the growth of small businesses in a sector of our economy that is so integral to the future of our workforce.

These are only a handful of the considerations I hope this Subcommittee covers in this hearing and I look forward to a thoughtful discussion about how federal policies can preserve the vibrancy and growth of the app economy.
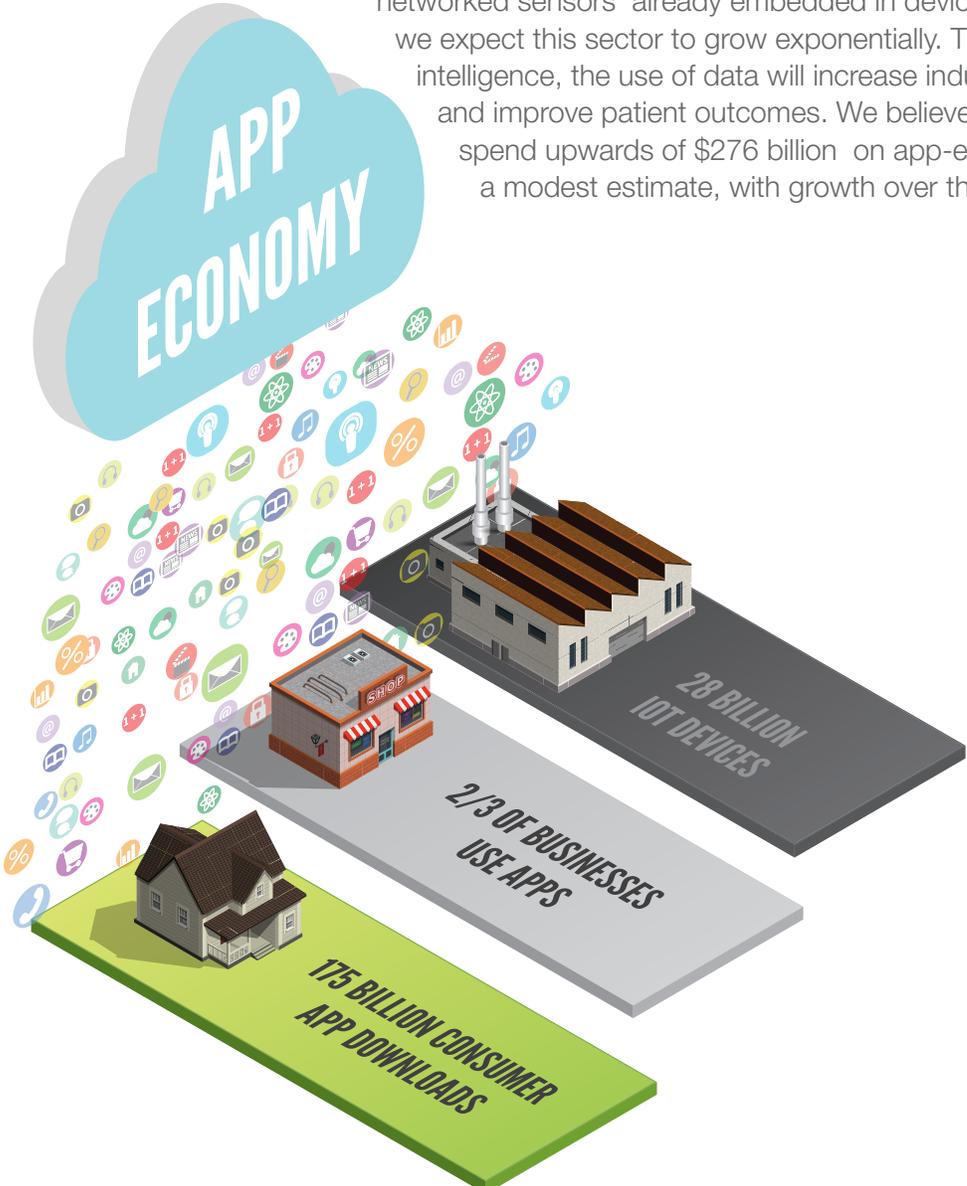
I. Apps: Disrupting Industries, and Providing New Value to Old Things

The consumer-focused app economy has evolved into a $950 billion ecosystem that has revolutionized how our businesses and industries operate. Apps continue to provide value to the more than 3.4 billion smartphone owners around the world. Today, they bring new opportunities to thousands of businesses and millions of everyday objects that drive the IoT revolution.

Last year alone, consumers were responsible for 175 billion app downloads on the Apple App Store, Google Play, and other third-party platforms. Importantly, these applications have grown to include casual uses and serve as the front-end interface for businesses incorporating enterprise apps to increase productivity, optimize output, and support customer engagement.

According to a 2016 Adobe report, more than two-thirds of businesses use enterprise apps for communication, employee training, and other purposes . Going forward, the demand for the efficiencies and competitive edge enterprise apps provide will outpace companies' internal ability to develop them by five to one .

By providing mobile access to data in the cloud, manufacturing, farming, and medical sectors across the country are increasingly incorporating app-enabled IoT technologies into their systems and operations. With 28.4 billion networked sensors already embedded in devices and machinery around the globe, we expect this sector to grow exponentially. Through machine learning and artificial intelligence, the use of data will increase industrial output, predict agricultural yields, and improve patient outcomes. We believe BCG's prediction that companies will spend upwards of $276 billion on app-enabled IoT technologies by 2020 to be a modest estimate, with growth over the next ten years likely to hockey-stick.

APP ECONOMY

28 BILLION IOT DEVICES

2/3 OF BUSINESSES USE APPS

175 BILLION CONSUMER APP DOWNLOADS

II. Overview

The app economy drives job creation, growth, and new opportunities.

- $950.6 billion value – The value of the app economy is derived from a thriving consumer market and a burgeoning number of enterprise applications and IoT innovations.

- 4.7 million employed – The app economy employs more than 4.7 million Americans as developers, software engineers, systems managers, and teachers.

- $86,000 average salary – With the nation's most competitive salaries, the average app economy job pays nearly double the national average ($48,000).

- 444,000 new computing jobs will be created – At its current rate, the app economy will add 440,000 new jobs to the American workforce by 2024.

- Businesses add new value to the app economy – Two out of three businesses utilize enterprise apps, complementing the 175 billion consumer downloads last year .

- 28 billion app-enabled IoT devices – As the intermediary between IoT devices and their users, apps will play a key role in the IoT market and its growth.

III. Challenges

The app economy has made some incredible leaps, but a few worrisome trends risk holding it back.

- For every eight available computing jobs, there's only one computer science graduate to fill it – Just 59,000 U.S. college graduates earned computer science degrees last year. That represents only a fraction of the 503,000 unfilled computing jobs nationwide.

- Cybercrime poses serious risks to the app economy - A lack of security protocols and a shortage of 285,000 cybersecurity professionals could threaten the app economy's future.

- 24 million Americans cannot benefit from the app economy – More than 24 million Americans cannot access, benefit from, or contribute to the app economy because they lack access to broadband.

IV. What is Congress' Role?

With the right resources, the app economy will reach new heights.

- Clear the way for 5G deployment and unlicensed use of the airwaves – 5G and technologies like Airband will support greater employment and add more than $200 billion in new value to the app economy.

- Take a cautious approach to privacy – The United States is the envy of the world in tech because our approach to privacy allows companies to innovate with data while targeting sensitive types of data. The App Association has been a leader in developing small business compliance guides for complex regimes and creating industry-led best practices.

- Apprenticeships hold the key to a new app economy workforce – Apprenticeships' on-the-job training could complement vocational training and academic efforts to equip Americans with the skills to meet the app economy's computing and cybersecurity needs.

- End-to-end encryption will be a key security method for data – Support for strong data protection measures like encryption will help preserve the benefits of the app economy from security threats.

V. Driving Employment

The explosive growth of the app economy has created new job opportunities across the country. In fact, the app economy employs more than 4.7 million Americans as the developers, software engineers, systems managers, teachers, and technical support who create and provide the apps that drive the app ecosystem.

The growing need for consumer, enterprise, and IoT apps has placed the app economy on track to add 440,000 new computing jobs to the American workforce by 2024. These job opportunities are not just for coders and developers. Network managers ensure an app's benefits are delivered. IT support ensures customers receive the greatest utility from their products. And educators teach the skills current and future app economy contributors need. Together, these Americans make the app economy what it is today.

> "Our company began with four developers working around a dining room table in Millbrook, Alabama. In just two years, we've doubled our size and expect to grow our staff to 16 by this summer. Just this spring, we moved into an office in downtown Birmingham to better serve the growing local tech community."
>
> Chris Sims, Founder
>
> Sigao Studios, Alabama

Not only does the app ecosystem deliver job opportunities, but it also provides a clear path to economic advancement. With average salaries upwards of $86,000, the app economy offers the nation's most competitive wages. In fact, developer and computing jobs represent the top drivers of new wages in the United States.

The app economy drives employment around the country. States like Colorado, Virginia, and New Jersey offer the nation's highest computing salaries, and Kentucky, Utah, and Nevada are expected to see the greatest job growth from our dynamic app ecosystem.

Wyoming is laying the groundwork to become an unexpected haven for blockchain and cryptocurrency opportunities. Legislation around telehealth has created new avenues for the app economy in Vermont. And Louisiana's supportive business environment will make it possible to grow their computing workforce by 21 percent by 2024. With competitive wages and available computing jobs in all corners of the country, our nation's app economy is overflowing with opportunities waiting to be met.

Over the next six years, the app economy will drive job growth in all corners of the United States.

FLORIDA
8.16% GROWTH

HAWAII
6.36% GROWTH

MISSISSIPPI
12.14% GROWTH

TEXAS
15.61% GROWTH

MONTANA
18.6% GROWTH

VI. Securing the Advantage

Cybercrime costs consumers more than $3 trillion worldwide. Our projections for the future of the app economy will depend on the ability to keep users' data safe. To date, app developers and tech companies have made a commitment to uphold privacy and security, but risks remain.

Innovations in the app economy are providing new avenues for users to interact with their doctors, make financial transactions, manage employee contracts, and even secure parking permits. With these new opportunities, patients will need secure channels to share health data with their doctors and insurance companies. Businesses will want to protect proprietary information shared through an enterprise app. And consumers will expect the financial information they access through their favorite banking app is kept private and secure.

Strong privacy and security protections are paramount to the app economy and will be vital to keep consumers safe from identity theft, medical fraud, financial loss, and other crimes. End-to-end encryption remains one of the strongest methods to secure data, and developers of consumer apps, enterprise software, and IoT devices are increasingly building encryption technology into their products. In fact, most encryption keys would take hackers billions of years to decode.

> "Encryption, robust security penetration testing, and cyber-hygiene controls are necessary to be a successful contributor to the app economy. As developers, we depend on our customers to drive our business, and they expect us to keep their valuable information safe. Ensuring protection of consumers' data will make or break players in this ecosystem."
>
> Joe Bonell, Founder and CEO
>
> Alchemy Security, Colorado

Regulations that weaken data protection, prohibit encryption, or require backdoor encryption keys will put consumer information in jeopardy and increase the potential for data loss. Without strong data privacy protections, the drivers and contributors to the app economy risk being overcome by privacy challenges – or worse, a loss of consumer trust.

As the app economy evolves, its ability to protect the privacy and security of the data shared throughout the mobile- and cloud-driven ecosystem will determine its path forward.

VII. Minding the Gaps

The United States continues to direct the app economy in meaningful ways by its leadership in cloud, computing resources, and advancements in machine learning and artificial intelligence. However, the current shortage of workers may prevent the United States from continuing in its influential role.

Coding, programming, and software development remain the foundation for app economy jobs, but only 40 percent of American K-12 schools, and just one in five high schools, teach the computer science skills the app economy needs. Of our nation's science, technology, engineering, and math college graduates, only 8 percent earn degrees in computer science.

The United States is home to 503,000 unfilled computing jobs. That's eight available jobs for every computer science graduate across the country. Computer science graduates have the second highest paying college degrees, earning upwards of $1.67 million in their lifetimes, but we do not have enough graduates to meet our country's app economy needs.

Filling these jobs will be vital to driving the app economy and ensuring each application has the proper security and encryption to keep app users safe. As a result, app developers and tech companies have taken on the added responsibility of innovator and educator. Companies around the country, from software developers in steel-driven Pennsylvania to coal-heavy Kentucky, tech entrepreneurs in Oklahoma to startups in New York, have developed apprenticeship programs to meet their workforce needs.

These programs require a lot of added resources, but they deliver success. On average, nine out of 10 apprentices immediately find jobs in their field. Because traditional schools are not supplying enough computer science graduates to meet the app economy's needs, we will need to look to apprenticeships, vocational education opportunities, community colleges, and training programs to create a skilled workforce that will drive this thriving ecosystem.

THE $950 BILLION APP ECONOMY EMPLOYS MORE THAN 4.7 MILLION AMERICANS

FOR EVERY 8 AVAILABLE COMPUTING JOBS IN AMERICA, THERE IS JUST ONE COMPUTER SCIENCE GRADUATE TO FILL IT.

VIII. Making the Connection

Mobile apps have grown rapidly to provide high-quality content for consumer and enterprise use. It is imperative that the infrastructure to support the cloud-driven, mobile economy continues to improve. With stronger internet connectivity and faster speeds, the app economy has the potential to be worth more – hundreds of billions of dollars more – by making apps available to Americans in industries across the country.

We see this happening in two ways. First, we must connect the more than 24 million Americans who lack access to the internet. Specifically, 20 million rural Americans lack internet access because they live in areas where it is not cost effective to provide current, wired broadband technology. Deployment of technologies like Airband, which utilizes spectrum between existing broadcast television channels, would deliver high-speed broadband over greater distance and reduce the cost of bringing the app economy to rural communities.

Second, the roll out of 5G technology will provide a paradigm shift in the understanding of broadband versus wireless connections in terms of throughput and latency. If the proposed roll out of 5G is successful, we believe its deployment alone would bring 3 million new jobs and $501 billion in economic growth.

> "5G and broadband can deliver entertaining apps, but also crucial access to healthcare. Rural Americans disproportionately experience chronic conditions like diabetes, but only 10 percent of U.S. doctors serve rural communities. Seeing a primary care doctor could require a two-hour drive and visiting a specialist often means an entire day off work. Internet connectivity can build a vital bridge to bring telehealth to rural Americans where and when they need it."
>
> – Lucienne Ide, Founder
>
> Rimidi, Georgia

The potential of the 5G revolution and expanded use of unlicensed spectrum is more significant than merely providing access. It will also increase internet speeds, add bandwidth, and lower latency in a way that benefits business-to-business interactions and IoT-driven machine-to-machine communications.

Once we make this connection, we can bring the app economy to the next level. Leadership in 5G deployment could create at least $200 billion in economic opportunity in the app economy and in industries around the country.

24 million Americans lack access to broadband.
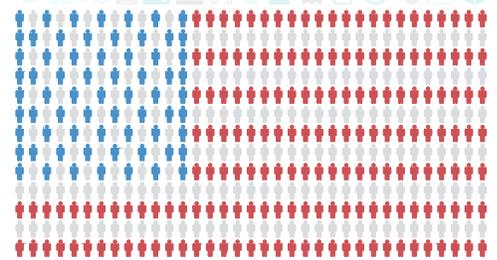
Advancements in 5G and broadband technologies could help connect more Americans to the app economy.

IX. Conclusion

Behind the impressive statistics—the $950 billion value, the 4.7 million-strong workforce, the $86,000 average salary, and the prospect of 440,000 new jobs—are the stories of real Americans who make the cloud-driven app economy what it is today and will drive its future growth.

The $46 billion remote patient monitoring industry is supported by Massachusetts developers who created a life-saving ulcer-tracking device for diabetes patients.

Apprenticeship programs led by software developers in rural Kentucky are doing their part to prepare workers to fill the available developer and computing jobs across America.

A Texas company's IoT device has put forth new solutions to help the livestock industry recover some of the $10 billion lost annually from animal illness.

The app economy is more than the numbers – the innovators, implementers, and developers give it value. By solving the pervasive challenges of broadband connectivity, workforce development, privacy, and encryption, American app developers will lead the app economy and grow its impact in the years to come.

End Notes

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Alabama

While Alabama's economy is led by steel and automotive production, the city of Birmingham is becoming a hotbed for startups and app developers. The state's tech ecosystem is advancing in cybersecurity and defense software development, while the state's developer workforce is expected to grow as more schools and community colleges offer coding and programming courses.

State of the App Economy

45,670
Current computing workforce

689
Undergrad CS degrees awarded in 2017

$85,466
Average computing salary

4,460
Current unfilled computing jobs

8.25 %
Projected computing job growth by 2024

17.1 % *(36.5%of rural population lacks access)*
Population without broadband access

Headquartered in Birmingham, MotionMobs designs and develops custom apps to bring companies' business ideas to life. The six-person team designs apps and software solutions to serve e-commerce, accessibility, and business development goals for clients across Alabama and around the country.

Sigao Studios is led by a team of developers and engineers whose software helps automate business processes and increase employee productivity. In addition to software development, Sigao Studios works with local small businesses to create mobile apps, effectively utilize business applications, and adopt new technologies that increase their competitiveness.

Alaska

In a state known for its oil reserves, Alaska has been an unexpected leader in apps that help users mine bitcoin and manage cryptocurrency reserves. Alaska's average developer salary is one of the highest in the nation, but growth in network connectivity will be vital to growing Alaska's app economy.

State of the App Economy

4,940
Current computing workforce

$90,853
Average computing salary

9.51 %
Projected computing job growth by 2024

33
Undergrad CS degrees awarded in 2017

665
Current unfilled computing jobs

23.7 % *(52.8% of rural population lacks access)*
Population without broadband access

Anchorage-based Helix, Inc. provides a mobile payment app and payment card to facilitate financial transactions for Bitcoin users. The app links to a user's Bitcoin wallet or bank account and generates a one-time virtual account number that connects with the credit card-like Helix electronic payment card. By linking Bitcoin to a virtual account and physical payment method, Helix enables users to spend their virtual currencies anywhere while maintaining their anonymity and security.

Arizona

Once dependent on copper mining, Arizona's workforce is slowly shifting to tech-related jobs. Banner Health is Arizona's largest employer and is helping to drive growth in local telehealth apps and innovations. Still, with two thirds of the state's rural population without broadband connectivity, the Grand Canyon state faces hurdles to reaching its app economy's full potential.

State of the App Economy

106,940
Current computing workforce

2,577
Undergrad CS degrees awarded in 2017

$86,981
Average computing salary

9,667
Current unfilled computing jobs

12.28%
Projected computing job growth by 2024

14.4% *(65.5% of rural population lacks access)*
Population without broadband access

WebPT provides web solutions for practitioners in the rehabilitation and therapy community. The Phoenix-based company offers software as a service for physical therapists using web-based tools to help them schedule appointments, bill services, track progress, and interact with their patients. The software also enables users to create reliable and comprehensive patient documentation and electronic health records.

ARKANSAS

Arkansas

After Arkansas passed laws requiring high schools to teach computer science courses, the state has experienced a threefold increase in computer science enrollment. This growth will help create a wider pipeline for the state's developer community and offset a decline in local system administrators and information security analysts.

State of the App Economy

27,250
Current computing workforce

344
Undergrad CS degrees awarded in 2017

$73,001
Average computing salary

1,601
Current unfilled computing jobs

-4.22 %
Projected computing job growth by 2024

22.5% *(42.7% of rural population lacks access)*
Population without broadband access

Apptegy is an education technology startup in Little Rock that is changing the way school districts distribute content. The company's Thrillshare product helps schools build their digital brand and identity through a digital platform that manages marketing and online interactions between schools and parents, children, or prospective students. The platform provides a space for teachers and administrators to share their school's success stories and strengthen their digital culture.

California

Silicon Valley's tech companies and app innovators are key contributors to the economy. The Golden State leads the nation in computing jobs and salaries, though more than half of California's rural population lacks broadband. While computing jobs are expected to grow 11 percent by 2024, strong broadband access will be vital to continued growth.

State of the App Economy

708,800
Current computing workforce

5,398
Undergrad CS degrees awarded in 2017

$108,125
Average computing salary

68,352
Current unfilled computing jobs

11.29%
Projected computing job growth by 2024

5.3% *(54.2% of rural population lacks access)*
Population without broadband access

Headquartered in Venice Beach, Dogtown Media is a mobile technology studio that creates mobile solutions that incorporate AI, mHealth, robotics, and IoT-related apps to positively impact businesses around the globe. Their digital products have received millions of downloads and transformed the relationship millions of people have with the brands they trust.

Based in Redwood City, Box is an enterprise cloud-based content management platform that helps individuals securely share and access files, and businesses manage data governance and retention. The company has 41 million users around the globe, including nearly 60 percent of Fortune 500 businesses.

Los Angeles small business BadVR is creating a new dimension for data science. The company has developed a next-generation visualization platform for enterprise data science that utilizes virtual reality to help clients visualize and "walk through" data to discover new insights and opportunities.

Colorado

The Centennial State has a diverse economy with a high concentration of scientific research and high-tech industries. While gig economy apps have influenced various aspects of the Colorado workforce, a growing number of developers have begun to create innovations that support local businesses and industries.

State of the App Economy

120,220
Current computing workforce

1,329
Undergrad CS degrees awarded in 2017

$96,844
Average computing salary

13,517
Current unfilled computing jobs

20.27%
Projected computing job growth by 2024

**5.2%** *(28.6% of rural population lacks access)*
Population without broadband access

Cliexa™ builds mobile platforms that help patients with chronic diseases monitor their ailments and assist doctors in making informed decisions about treatment plans. For example, the cliexa-RA app enables patients with rheumatoid arthritis to track their medication and symptoms and translates them into scientific information that can be read and understood by physicians.

Denver-based Alchemy Security helps companies mitigate cybersecurity risks. As more companies integrate software and apps into their business models, there is a growing need keep vital data safe. With 200,000 unfilled cybersecurity jobs in America, Alchemy's expertise gives clients piece of mind to prevent and solve cyber risks.

Just outside of Colorado Springs, Colorado Technology Consultants provides consulting and training services to help businesses gain and maintain a competitive edge in the digital economy. The team of technologists specialize in emerging technologies to better help businesses create advanced software solutions.
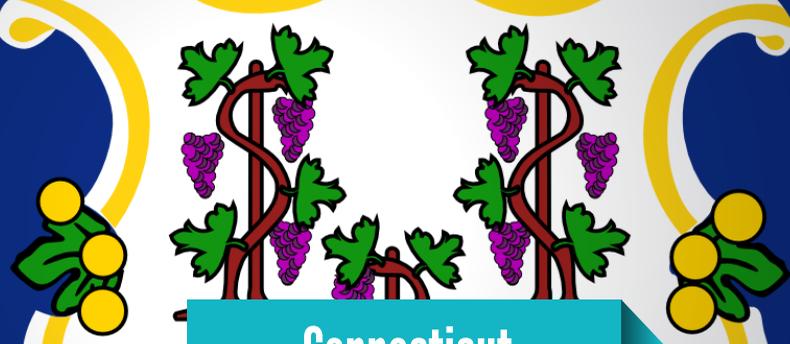
Connecticut

The finance and insurance industries drive Connecticut's economy. The state ranks amongst the top five in high schools offering advanced computer science courses, marking heightened potential for the state's app-enabled businesses.

State of the App Economy

54,310
Current computing workforce

404
Undergrad CS degrees awarded in 2017

$96,390
Average computing salary

6,473
Current unfilled computing jobs

11.18%
Projected computing job growth by 2024

0.9% *(0.9% of rural population lacks access)*
Population without broadband access

Developed in the University of Connecticut Technology Incubator Program (TIP), Mobile Sense Technologies builds the technical foundations for long-term, off-the-chest wearable devices that monitor cardiac arrhythmias. The company's SensBandTM is a non-adhesive, wireless monitoring system that utilizes advanced detection algorithms to monitor heart rates and cardiac health.

New Haven's SeeClickFix, Inc. app provides a platform for communication and civic engagement within communities. Popular among neighbors, community groups, and local governments, the mobile app enables users to report potholes, graffiti, and other issues in their neighborhoods, and gives governments the tools to manage requests and communications.

Delaware

With the allure of beautiful coastlines and no sales tax, tourism is one of Delaware's leading industries. App developers across the First State have created new software to meet their visitors' needs

State of the App Economy

15,130
Current computing workforce

196
Undergrad CS degrees awarded in 2017

$94,551
Average computing salary

2,079
Current unfilled computing jobs

9.19%
Projected computing job growth by 2024

2.7% *(7.8% of rural population lacks access)*
Population without broadband access

The Delaware on Tap app, introduced by the Delaware Tourism Office, provides an easy, mobile way to raise awareness of and drive patronage to the state's breweries, wineries, distilleries, and cideries. To bolster the state's $3 billion tourism industry, the app includes features that connect visitors with local events, suggestions for dining, and ride hailing platforms to prevent users from drinking and driving.

District of Columbia

The District of Columbia is full of transplants from across the country, but its workforce has the highest percentage of female computer science graduates in the nation. Though the federal government accounts for 30 percent of the district's jobs, local developers continue to create new opportunities in education, finance, and public policy.

State of the App Economy

48,840
Current computing workforce

212
Undergrad CS degrees awarded in 2017

$106,274
Average computing salary

10,793
Current unfilled computing jobs

2.09%
Projected computing job growth by 2024

1.9 %
Population without broadband access

Based in Washington, D.C., AgSquared provides a farm-planning platform that helps farmers develop harvest schedules, calculate seed order, visualize field layouts, and keep production on schedule in a centralized, organized system. The Washington, D.C. company helps farmers across the country build a complete picture of their farm's productivity, profitability, and sustainability.

MobiDox Health Technologies is a web platform that helps pharmaceutical companies process drug safety data. The mother-daughter team provides a drug safety management platform that offers an automated workflow to help pharmaceutical companies expedite the processing of adverse events that occur during clinical trials and drug safety reviews, while providing regulatory agencies with better drug data.

Based in the nation's capital, Quorum provides a public affairs software platform that enables organizations to launch advocacy campaigns, manage stakeholder engagement, and monitor activities in cities around the country. Quorum's clients include businesses, congressional offices, non-profit organizations and more to keep track of the goings-on in their public spheres.
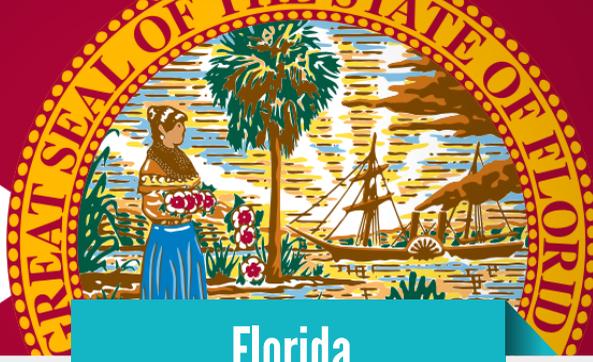
Florida

The Sunshine State is consistently ranked as a leader in developer jobs. Florida's tech ecosystem has experienced sustained growth in hiring and available jobs, with nearly 70 percent of southern Florida tech companies looking to hire new workers.

State of the App Economy

220,340
Current computing workforce

3,258
Undergrad CS degrees awarded in 2017

$82,812
Average computing salary

22,365
Current unfilled computing jobs

8.16%
Projected computing job growth by 2024

4.2% *(25% of rural population lacks access)*
Population without broadband access

Bradenton's Qure4U mobile platform is designed to help healthcare professionals increase patient engagement. Qure4U provides digital self-care apps that help patients stay on track with their care plans with a suite of features that enable patients to monitor their health vitals, check-in for appointments, and communicate with their healthcare team through notifications, while helping doctors cater treatment options or identify at-risk patients.

Florida remains a popular destination for retired Americans and Tampa-based CareSync helps improve care coordination for Medicare patients. CareSync enables Medicare patients to manage their health between doctors' visits through a platform that creates a personalized care plan, access to 24/7 healthcare support, connections to specialists and healthcare resources, and more. This patient care coordination tool helps doctors work together to improve patient health.

Homnick Systems in Boca Raton is led by a small team of experts who deliver knowledge solutions for companies that utilize Microsoft software services. In addition to consulting and helping their small business clients efficiently utilize Microsoft applications, they offer data science training for businesses and individuals in Florida and across the country.

Georgia

With nearly twenty Fortune 500 companies headquartered throughout the state, Georgia is a hub for innovation and growth. The state's challenges in healthcare access and rising healthcare costs have sparked growth in app development in the industry.

State of the App Economy

146,410
Current computing workforce

2,023
Undergrad CS degrees awarded in 2017

$90,800
Average computing salary

19,170
Current unfilled computing jobs

3.90%
Projected computing job growth by 2024

9.2% *(28.4% of rural population lacks access)*
Population without broadband access

Rimidi is changing the way doctors implement diabetes care. The mobile platform uses population health analytics to identify patient groups that could benefit from new therapies and helps clinicians optimize healthcare outcomes through clinical decision support tools that integrate patient-generated data into doctors' decision making.

Aces Health 's platform was designed to help next-generation clinical studies work better and more efficiently. The Atlanta-based company builds software solutions that fight medical non-adherence to keep patients on track with clinical trials. Their flagship app platform connects to more than 200 wearable sensors and smart devices and thousands of electronic medical record systems to help save critical time and money in the clinical research on drug development.

In the heart of Atlanta, SouthernDNA is a software development company that specializes in the design of software and mobile applications across devices. In addition to developing software, they provide a vital resource to their clients in the form of digital marketing and consulting.

Hawaii

Though small, Hawaii is a leader in preventive care and often cited as a model for universal healthcare plans. Hawaii's islands are home to a growing number of companies and individuals developing apps and solutions for the telehealth sectors.

State of the App Economy

10,700
Current computing workforce

213
Undergrad CS degrees awarded in 2017

$84,113
Average computing salary

1,403
Current unfilled computing jobs

6.36%
Projected computing job growth by 2024

4.8% *(37.6 % of rural population lacks access)*
Population without broadband access

HealthTechApps designs technologies that help patients and doctors monitor and manage concussions and brain injuries. The company's first app, War2Home, helps members of the military and warfighters combat traumatic brain injuries through cognitive exercises on their mobile phones. The Honolulu-based company is currently developing a MePrint technology platform to help athletes recover from sports-related concussions. The platform would help athletes monitor and manage their symptoms and share their patient-generated health and recovery data with their doctors.

Idaho

Over the last few decades, Idaho's agriculture-dependent economy has diversified to make the state a leader in science and tech. Tech companies are increasingly locating their headquarters in Boise, contributing to the thriving new app industry. Idaho's tech sector drives a quarter of the state's revenues and 70 percent of its exports.

State of the App Economy

8,920
Current computing workforce

343
Undergrad CS degrees awarded in 2017

$73,538
Average computing salary

1,206
Current unfilled computing jobs

52.24%
Projected computing job growth by 2024

11.6% *(33.3% of rural population lacks access)*
Population without broadband access

pSiFlow Technologies, Inc. provides the innovative ability to monitor water quality through a mobile phone. The Boise-based company developed a water quality screening method that enables chemical test strips to be sent and analyzed in the cloud, providing results within 30 seconds. The technology is valuable to companies that monitor drinking water quality and provide disaster management services, and it can help organizations identify contaminated locations for targeted response.

Illinois

Illinois is a major transportation hub with an abundance of natural resources, which creates a diverse economic base for the state. Home to many of the country's largest universities, Illinois's startups are thriving with a growing number of local developers joining the app economy.

State of the App Economy

194,910
Current computing workforce

2,496
Undergrad CS degrees awarded in 2017

$91,699
Average computing salary

21,701
Current unfilled computing jobs

8.49%
Projected computing job growth by 2024

5.3% *(36.6% of rural population lacks access)*
Population without broadband access

Developed out of the University of Illinois's John Deere Technology and Innovation Center, the GrainTruckPlus app helps farmers efficiently manage grain truck fleets. The app helps farmers manage grain transports through features that provide a comprehensive view of fleet location, available grain elevators, and wait times.

InRule Technology is a Chicago-based software company that develops software for authoring, managing, and executing business rules. The company provides business rule management system (BRMS) software that harnesses the power of computing without the complexity of programming rules for customers in the healthcare, financial services, and government sectors.

Chicago's Hacksmith Labs is a custom software development company that creates web and mobile apps, websites, and other products for businesses across the country. They seek to make software development fun and easy. They developed a "scavenger hunt" feature for the Made in America music festival app and built an app for the peer-to-peer lending platform, SoloFunds.

Indiana

Much of the Hoosier State's economy is driven by manufacturing, but Indiana now ranks fifth in America for pharmaceutical jobs. The growth of the pharmaceutical industry has sparked new innovations and mobile platforms to increase efficiency in production and product management.

State of the App Economy

60,570
Current computing workforce

1,737
Undergrad CS degrees awarded in 2017

$79,041
Average computing salary

6,241
Current unfilled computing jobs

9.77%
Projected computing job growth by 2024

13.1% *(41.5 % of rural population lacks access)*
Population without broadband access

Mishawaka's Digi Smart Temps provides a temperature monitoring system that allows companies to quickly and efficiently manage temperature-controlled areas. The company provides sensor-enabled temperature-monitoring devices to collect data and safely share it with a cloud-based command center. The digital command center can be accessed on mobile phones and devices, enabling users from pharmacies to hospitals to food service providers to monitor temperature-controlled areas, manage temperature logs, and effectively report issues.

Iowa

As a national leader in farming, Iowa often evokes thoughts of agriculture and livestock. Many of the state's software developers have created enterprise apps for the agriculture industry, drawing upon artificial intelligence and IoT sensors to do everything from track swine health to monitor farm productivity.

State of the App Economy

37,710
Current computing workforce

627
Undergrad CS degrees awarded in 2017

$81,135
Average computing salary

3,967
Current unfilled computing jobs

10.77%
Projected computing job growth by 2024

**9.6%** *(22.8% of rural population lacks access)*
Population without broadband access

Cedar Rapids startup SwineTech is using sensor-based technologies to bridge the gap between producers and pigs and help address the chronic issue of piglet crushing. Each year, the pork industry loses billions of dollars from piglets crushed by mother sows. The company's SmartGuard ® utilizes sensors that can track a piglet's vitals and behaviors in real-time and issue a vibration if piglets are in distress, alerting sows to stand up and the farmers to address the issue.

Ames-based Performance Livestock Analytics integrates big data solutions into livestock management to help producers increase sustainability and profitability. The company's Performance Beef system provides a Bluetooth-enabled device that works with scale systems to automate the feed delivery process. This enables beef producers to track every pound of feed delivered to manage inventory and farm costs.

Based in Coralville, Higher Learning Technologies iintegrates big data solutions into livestock management to help producers increase sustainability and profitability. The company's Performance Beef system provides a Bluetooth-enabled device that works with scale systems to automate the feed delivery process. This enables beef producers to track every pound of feed delivered to manage inventory and farm costs.
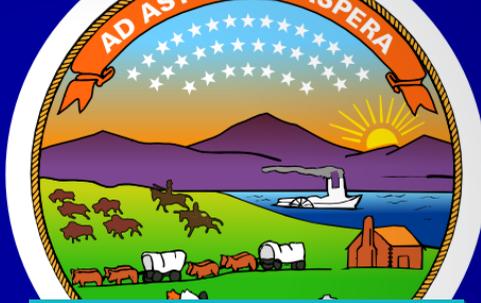
Kansas

Kansas is a leading agricultural producer of wheat, corn, sorghum, and soybeans. Developers across the state have been driving new solutions in the connected agriculture industry with a growing number of companies utilizing IoT to bring big data into agriculture management. Greater broadband connectivity for rural communities could support more growth in the local app economy.

State of the App Economy

37,740
Current computing workforce

470
Undergrad CS degrees awarded in 2017

$77,756
Average computing salary

2,532
Current unfilled computing jobs

1.54%
Projected computing job growth by 2024

10.8% *(33.5% of rural population lacks access)*
Population without broadband access

Leawood-based Farmobile provides a device that helps bring big data into the hands of farmers to manage agronomic information. Using data gathered from a device attached to traditional farm machinery, the subscription-based service securely presents farm information on a mobile dashboard and gives users the ability to share electronic field reports and other data with agronomists and other farmers.

Kentucky

Once a leader in coal production, Kentucky has diversified its economy with growth in new industries like auto manufacturing and technology. The state has seen a growth in apprenticeship and retraining programs to teach the local workforce new skills like computer coding and software development. The prospects are promising – Kentucky leads the nation in projected computing job growth by 2024

State of the App Economy

33,571
Current computing workforce

521
Undergrad CS degrees awarded in 2017

$77,000
Average computing salary

2,234
Current unfilled computing jobs

46.10%
Projected computing job growth by 2024

15.8% *(35% of rural population lacks access)*
Population without broadband access

Bit Source leads a team of coal miners-turned-certified software developers who design, develop, and launch software for businesses around Appalachia and the country. In addition to developing consumer, business-to-business, web, and mobile solutions, the Pikeville-based company also offered a successful apprenticeship program to teach local workers and former coal miners coding, software development, and computer science skills.

Fooji is an experiential technology company in Lexington that helps companies provide on-demand delivery services that create unique "fan" experiences. By leveraging social media and emojis, Fooji allows big brands to engage with customers through promotions and experiences that drive marketing online and sales offline.

Based in Covington, SpeakEasy offers an enterprise platform for marketing and content distribution. Their platform allows businesses to connect with targeted audiences to deliver marketing campaigns, share discounts and information, and encourage customer engagement.

Louisiana

With a diverse economy driven by large and small businesses, Louisiana was ranked as one of the nation's most small-business friendly states. Developers and tech entrepreneurs have increasingly developed innovative apps to help serve the prominent petroleum industry, sparking a projected 21 percent growth in computing jobs by 2024.

State of the App Economy

21,650
Current computing workforce

403
Undergrad CS degrees awarded in 2017

$74,440
Average computing salary

1,953
Current unfilled computing jobs

21.57%
Projected computing job growth by 2024

15.5% *(43.1% of rural population lacks access)*
Population without broadband access

[Cleargistix](#) provides a platform to help businesses eliminate inefficient, paper-based activity recording. Used primarily by businesses in the oil and gas service industry, the Madisonville-based company offers a customizable digital field ticketing system that enables users to capture revenue, inspection, payroll, and other information throughout the reporting process.

New Orleans-based [Torsh](#) is an online platform that helps school leaders support educators through student assessments, class observations, goal-setting, and more. The platform provides video and in-person classroom observation tools that support educators' ability to observe teachers in action and follow up with guidance and mentorship.

[Drill Labs](#) in Thibodaux provides real-time mud logging and geological data to companies throughout the oil industry. The company's Geo Monitor app brings efficiency to mud logging crews while providing error-free calculations in lag, penetration rate, and other information.
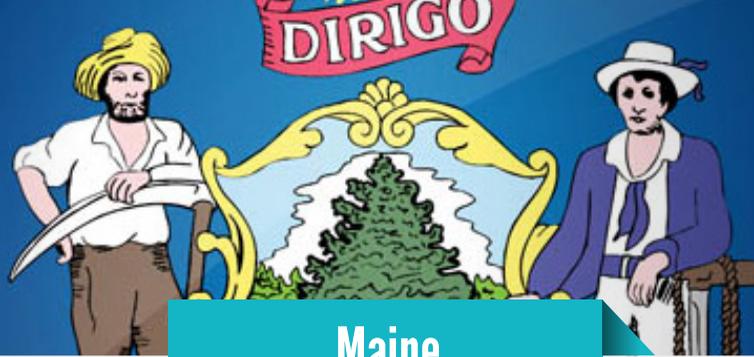
While manufacturing remains a leading industry in Maine, the state is leading the nation in the local food movement. The market for locally-sourced food has grown four times faster than industrial agriculture in the past decade, and the state's app developers are helping this innovative movement reach its full potential.

State of the App Economy

12,390
Current computing workforce

121
Undergrad CS degrees awarded in 2017

$76,938
Average computing salary

1,116
Current unfilled computing jobs

2.10%
Projected computing job growth by 2024

11.6% *(16.7% of rural population lacks access)*
Population without broadband access

Headquartered in Portland, Forager is an online business-to-business platform that streamlines the local food sourcing process for wholesale buyers and small farmers. By digitizing the sourcing process -- ordering, receiving, invoicing, and payments -- Forager makes it easy to buy local food. Today, Forager is working with dozens of buyers and more than 100 local suppliers offering produce, dairy, meat, and specialty groceries.

Founded by an anesthesiologist and an industrial designer, SmartSharps develops precision medical needle guidance technologies to eliminate patient harm from incorrect medical needle placement. The company offers a micro sensor-enhanced medical needle system that utilizes machine learning technology and microelectromechanical sensors placed on the tip of a needle to help doctors improve accuracy in needle placement procedures.

Maryland

A leader in high schools that offer AP computer science classes and computer science graduates, Maryland's highly diversified economy is growing in biotech and manufacturing. By 2024, Maryland's computing workforce is expected to grow by more than 30 percent.

State of the App Economy

134,080
Current computing workforce

3,039
Undergrad CS degrees awarded in 2017

$99, 619
Average computing salary

19,986
Current unfilled computing jobs

30.47%
Projected computing job growth by 2024

2.5% *(6.4% of rural population lacks access)*
Population without broadband access

emocha Mobile Health is redesigning the way patients take medication and helping to tackle the public health challenges that result from medication non-adherence. The emocha app allows patients to share videos of themselves taking their medication while providing a digital means for caregivers to implement directly observed therapy, proven to be an effective way to ensure medication adherence. The app supports accountability between patients and healthcare providers while reducing transportation costs associated with administering medication to remote patients.

Massachusetts

The Bay State consistently ranks as one of the most innovative states in the country and is a global leader in biotechnology, engineering, and maritime trade. Massachusetts has one of the highest average computing job salaries in the county, helping to drive the attractive startup culture in the state. This environment has led to a spike in growth in the current computing workforce, which will balance out over the next six years.

State of the App Economy

165,900
Current computing workforce

2,000
Undergrad CS degrees awarded in 2017

$101,040
Average computing salary

16,241
Current unfilled computing jobs

-4.44%
Projected computing job growth by 2024

2.4% *(9.7% of rural population lacks access)*
Population without broadband access

Podimetrics is a Boston-based medical technology services company that develops hardware-enabled, thermal imaging solutions to predict and prevent diabetic foot ulcers, the leading cause of diabetes-related foot amputations. The company's Podimetrics MatTM is a wireless, in-home monitoring technology that collects foot temperature scans to alert diabetic users of potential foot ulcers and other inflammatory foot diseases.

An autonomous customer support platform, Boston's RevTwo is the world's first to use artificial intelligence to identify and answer customer queries. The platform enables companies to provide around-the-clock customer support, timely customer feedback, and accurate customer solutions without human staff.

Headquartered on MIT's campus in Cambridge, Cape Ann Development is a custom enterprise software development company focusing on providing security, data integrity, and scalability for business software. The company offers design, analytics, mobile development, and data science services to an array of businesses and customers around the country.

Michigan

Home to Home to America's Motor City, Michigan is known for its car manufacturing and high- tech industries. Ann Arbor is leading the nation in research and development of self- driving cars, while local app developers are increasingly involved in building innovative software to bring IoT and big data into transportation.

State of the App Economy

127,060
Current computing workforce

1,873
Undergrad CS degrees awarded in 2017

$ 83, 910
Average computing salary

13,820
Current unfilled computing jobs

4.94%
Projected computing job growth by 2024

9.8% *(33.7% of rural population lacks access)*
Population without broadband access

Detroit-based Tome's team of developers specializes in the design, development, and launch of mobility products and services in an IoT driven world. The team offers businesses and individuals technologies that support route optimization, bike share integrations, athlete performance tracking, and even bicycle-to-vehicle communications within traditional urban settings.

ProNav™ is a Houghton-based company offering high tech fishing products to boating and fishing enthusiasts. The ProNav™ Angler offers a GPS-guided autopilot system that attaches to a boat's motor, and the Angler app enables users to control a boat's movement and other navigational functions with ease from their mobile phone.
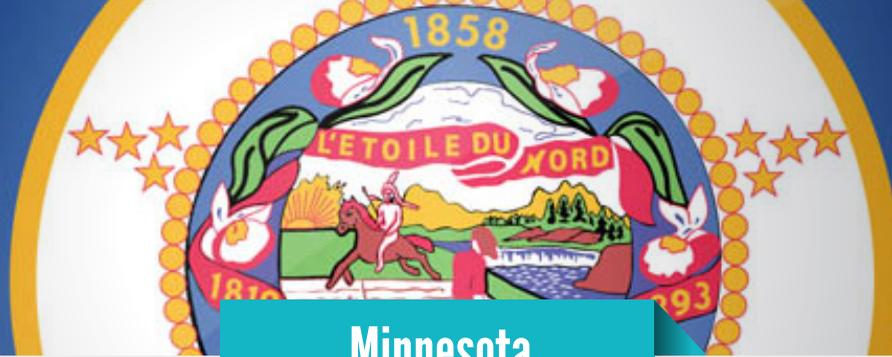
Minnesota

More than 60 percent of Minnesota's residents live in the Minneapolis-Saint Paul metropolitan area, which is the epicenter of the state's government, transportation, and education industries. Agriculture is an important driver of the Minnesota economy, and developers are introducing innovative software and technologies to modernize the industry.

State of the App Economy

107,290
Current computing workforce

1,337
Undergrad CS degrees awarded in 2017

$91,693
Average computing salary

11,550
Current unfilled computing jobs

2.94%
Projected computing job growth by 2024

7.5% *(25.3% of rural population lacks access)*
Population without broadband access

Minneapolis-based Sentera supplies integrated remote sensor solutions that are helping to drive digital agriculture. The Company's FieldAgent mobile app connects with sensor-enabled drones to track crop growth stages, storm damage, weed growth, and other vital information that enables farmers to manage and monitor crop health data.

Kosmik Innovations is a software development company in the heart of Minneapolis that provides their local clients with tech consulting and guidance around different Microsoft platforms. In addition to mobile and web app development, Kosmik provides software and developer training for interested companies in their community.

Myrium Technology Solutions provides consulting and training to help small and medium-sized businesses integrate new technologies into their workflow. The Moorhead-based company specializes in an array of technologies and formats to help companies increase their efficiency, maintain a competitive edge, and utilize innovative technologies to their benefit.

Mississippi

Though a traditionally agricultural state, necessity has driven growth in Mississippi's app economy. With residents in 60 percent of the state's counties more than a 40-minute drive from specialty healthcare facilities, Mississippi's hospitals have begun to turn to tech to find solutions. The potential for these healthcare innovations could be far greater with improved broadband and internet connectivity.

State of the App Economy

11,700
Current computing workforce

157
Undergrad CS degrees awarded in 2017

$74,131
Average computing salary

1,269
Current unfilled computing jobs

12.14%
Projected computing job growth by 2024

27.8% *(50.2% of rural population lacks access)*
Population without broadband access

University of Mississippi Medical Center (UMMC) uses software and innovations in healthcare technology to provide more residents with healthcare access. Just last year, UMMC's Center for Telehealth was named the Telehealth Center for Excellence by the Health Resources and Services Administration for their work to utilize telehealth platforms to deliver healthcare opportunities to the state's remote communities. The Center maintains more than 200 satellite locations and uses remote patient monitoring tools and connected healthcare devices to connect rural patients with doctors and healthcare professionals.

Myra Mirrors is an Oxford-based company building smart mirrors that can integrate information from apps and connected devices onto a mirror's surface. These smart mirrors act as an interface, enabling users to access a host of information, including weather, stocks, and their calendar. In addition to their mirrors, the company licenses its operating system, ReflektOS, to developers interested in creating apps and products that can be incorporated into compatible, data-enabled smart mirrors.

Missouri

While Missouri's leading industries include aerospace and electrical equipment, local developers are creating software solutions that support innovations in agriculture and IoT. Missouri's developer community has great potential, but lack of broadband connectivity for half of the state's rural residents hinders growth.

State of the App Economy

92,920
Current computing workforce

1,266
Undergrad CS degrees awarded in 2017

$85,236
Average computing salary

10,088
Current unfilled computing jobs

2.08%
Projected computing job growth by 2024

16.6% *(50.8% of rural population lacks access)*
Population without broadband access

FitBark is a Kansas City company dedicated to helping pets and humans get healthy together. The company offers a sensor-enabled dog activity monitor that can track a dog's activity levels, location, and overall health and delivers data to an easy-to-use mobile app. More than 45 veterinary schools and research institutions around the country use FitBark to address medical conditions like mobility, skin diseases, and nutrition.

Fybr develops enterprise IoT products for businesses, communities, and smart cities. The company provides IoT solutions collect and deliver data related to transportation, power, and resource management, and even offer an app called Parking Genius that can lead users to open parking spots.
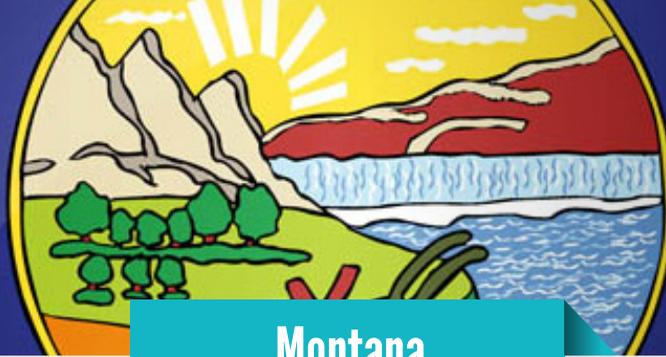
Montana

Though agriculture-heavy Montana ranks last among high schools offering AP computer science courses, and one in four Montanans do not have access to the internet, Bozeman has become an unexpected hub for tech and innovation, largely driven by local college graduates and Silicon Valley transplants.

State of the App Economy

3,710
Current computing workforce

176
Undergrad CS degrees awarded in 2017

$68,615
Average computing salary

649
Current unfilled computing jobs

18.6%
Projected computing job growth by 2024

25.4% *(45.5% of rural population lacks access)*
Population without broadband access

Based in Bozeman, Foundant Technologies helps philanthropic foundations streamline the grant proposal processes. The company provides software solutions for grant makers, grant seekers, community foundations, and scholarship providers to help them track applications and deadlines, create new proposals, and manage events.

Triple Tree is a small app design and development company that builds digital products and solutions for local startups and businesses. The Bozeman-based company creates hybrid and native mobile apps and IoT solutions and designs unique user experiences to give companies an edge among target audiences.
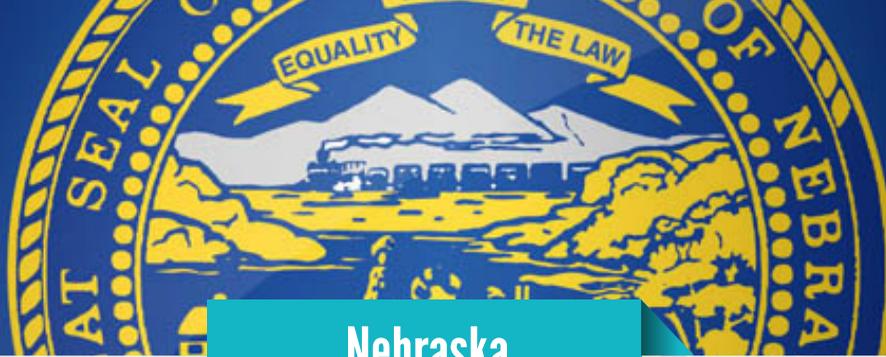
Once called the Great American Desert, Nebraska is one of the United States' leaders in agricultural output. Developers across the state have produced innovative agriculture tech solutions that serve their thriving horticultural and livestock industry.

State of the App Economy

30,560
Current computing workforce

455
Undergrad CS degrees awarded in 2017

$78,384
Average computing salary

2,432
Current unfilled computing jobs

4.68%
Projected computing job growth by 2024

11.1% *(34.7% of rural population lacks access)*
Population without broadband access

Based in Lincoln, Quantified Ag uses IoT technology to predict and prevent illness amongst farm animals. Using a non-invasive ear tag, Quantified Ag enables farmers to address animal illness before it spreads. The biometric ear tags include sensors that transmit livestock data in real time and feature LED lights to help farmers quickly and easily identify sick animals.

Liberty is dedicated to transforming mobility in small urban and rural communities. The company works with drivers and transportation providers to offer ride-sharing services through a smartphone app specifically designed for users in rural and remote communities. Citing low cell access in rural communities, the Liberty app was designed to work in areas with little or no network signal.

Nevada

Nevada is home to a growing number of developers and app innovators who use big data and predictive analytics to help leading industries operate more effectively. Nearly half of the state's rural community lacks broadband access, and with increased connectivity, the 13 percent growth in computing jobs could be greater.

State of the App Economy

19,190
Current computing workforce

162
Undergrad CS degrees awarded in 2017

$80,392
Average computing salary

2,095
Current unfilled computing jobs
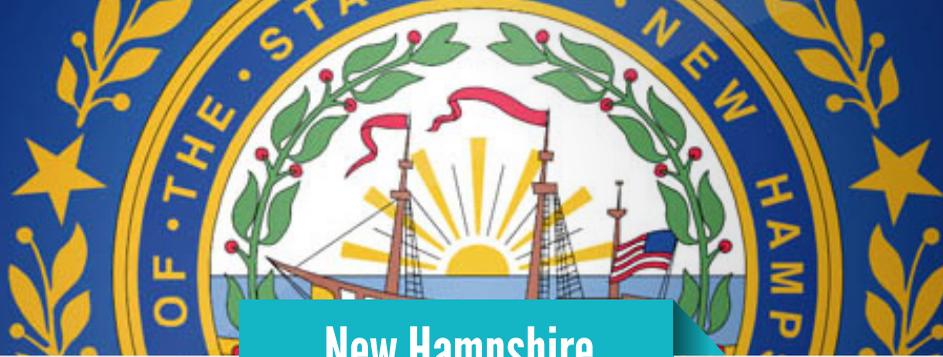
13.81%
Projected computing job growth by 2024

4.1% *(48.9% of rural population lacks access)*
Population without broadband access

Based in Carson City, Resgrid provides communications, management, and logistics solutions for first responders. The Resgrid app allows first responders to communicate with personnel teams while addressing an emergency, share dispatch details, develop reports and notes, and track the status of personnel locations and emergency responses.

New Hampshire

New Hampshire's economy has traditionally been driven by manufacturing and agriculture, but local developers have created innovative software solutions that support the state's key industries and address new nationwide challenges.

State of the App Economy

21,280
Current computing workforce

396
Undergrad CS degrees awarded in 2017

$94,938
Average computing salary

1,340
Current unfilled computing jobs

4.65%
Projected computing job growth by 2024

5.9% *(12.4% of rural population lacks access)*
Population without broadband access

Portsmouth-based B2W Software provides software solutions that help companies of all sizes manage civil-scale construction projects. The company's software platform supports operations at construction sites, helps maintain machinery fleets, and captures project data to ensure projects run safely, efficiently, and cost-effectively.

Addapptation is an app development company based in Manchester. The company helps non-profit organizations and small businesses develop customizable, micro apps that complement large software platforms to meet specific business needs.

New Jersey

New Jersey is home to a multifaceted economy led by pharmaceutical, financial, and telecommunications industries. The Garden State ranks third amongst the nation's top states offering AP computer science and draws upon its large labor pool to drive employment in the state.

State of the App Economy

161,590
Current computing workforce

1,214
Undergrad CS degrees awarded in 2017

$102,432
Average computing salary

22,108
Current unfilled computing jobs

5.72%
Projected computing job growth by 2024

1% *(2.7% of rural population lacks access)*
Population without broadband access

Based in Princeton, Wattvision builds software and sensors that provides users real-time information and visualizations of their energy usage. The company's sensors can attach to any utility meter to transmit energy consumption data on their mobile and web platforms, which can also generate bills and usage reports for tenants. The company is popular among individuals, businesses, and property management companies interested in monitoring and reducing their energy consumption.

Melvicorp provides software services to companies of all sizes. The Lincoln Park company specializes in mobile, desktop, and cloud computing technologies to deliver a range of services for enterprise customers, including software architecture consulting, custom web development, and technology training.

New Mexico's state government offers tax credits and technical assistance programs to promote job growth and business investment, particularly in new technologies. The prospects for the state's developer economy could grow exponentially with greater broadband access for the 57 percent of the state's rural population without access to the internet.

State of the App Economy

16,750
Current computing workforce

195
Undergrad CS degrees awarded in 2017

$83,304
Average computing salary

1,554
Current unfilled computing jobs

4.96%
Projected computing job growth by 2024

19.5% *(57.5 % of rural population lacks access)*
Population without broadband access

APPCityLife ® is an Albuquerque-based platform helping cities deploy mobile apps that engage citizens. The company creates interactive solutions for cities and municipalities, including an artificial intelligence chatbot that supports multilingual conversations and enables residents and visitors to connect with local resources like public transportation schedules, community events, and emergency services.

Lavu's mobile point of sale software helps restaurants and bars manage orders and customer service quickly and efficiently. The software not only runs on web-enabled tablets that streamline restaurants' workflow by taking orders and managing payments, but it also simplifies common tasks of running a restaurant like tracking kitchen inventory, managing waitstaff shifts, and planning menu items.

Often described as the financial, cultural, and media capital of the world, New York is also home to the nation's second largest community of developers. Nearly 10 percent of top-grossing consumer apps are developed in New York, and the Big Apple continues to drive software innovations for businesses and enterprises.

State of the App Economy

289,520
Current computing workforce

4,017
Undergrad CS degrees awarded in 2017

$103,407
Average computing salary

31,438
Current unfilled computing jobs

11.34%
Projected computing job growth by 2024

2.1% *(15.8% of rural population lacks access)*
Population without broadband access

The One Drop diabetes management platform harnesses the power of mobile computing to empower people with diabetes to live healthier lives. The Bluetooth-enabled One Drop | Chrome is a blood glucose monitor that helps users track and analyze their glucose level, medications, diet, and activity in one place.

Like its name suggests, StartUp Health organizes, supports, and invests in tech startups dedicated to tackling the world's biggest healthcare challenges. Through their Moonshot Academy, the company offers their fleet of startups, or "Health Transformers," access to coaching workshops, investor networks, promotional opportunities, and more, providing an important service to the next generation of healthcare innovators

Blue Badge Insights provides internet information services and strategic and analytical guidance for businesses that use Microsoft technologies. Their expertise helps business leadership understand and implement the most effective tech strategies that support participation and competition in their software-driven work.

North Carolina

Home to one of the largest research parks in the world and several well-known universities, North Carolina is consistently ranked as one of the best states in the nation for STEM jobs. Local app developers have benefited from Raleigh's booming tech scene, where numerous Fortune 1000 companies are headquartered.

State of the App Economy

142,990
Current computing workforce

1,375
Undergrad CS degrees awarded in 2017

$90,932
Average computing salary

17,442
Current unfilled computing jobs

6.55%
Projected computing job growth by 2024

6.9% *(19.5% of rural population lacks access)*
Population without broadband access

The Huntersville-based digital platform Sentry One allows data professionals to utilize the Microsoft data platform across physical, virtual, and cloud-based environments. The platform enables businesses to consolidate their toolsets, reduce infrastructure costs, and increase database speed while providing powerful dashboards to visualize performance and generate insights.

Passport is a mobile payment software for parking and transit services catered to cities, universities, and private companies. The Charlotte-based company offers a parking app, as well as parking enforcement, permit management, and tolling services to private operators and more than 450 cities around the world.

Freecloud Design is an app development company that specializes in educational game apps. The one-man shop located in Charlotte has developed several top-ten App Store apps including geography-driven Stack the States® and the Monster Physics® app that allows users to build and operate virtual cars and cranes.

North Dakota

As one of the nation's states with the most rural land, North Dakota's economy is driven by agriculture. The Peace Garden State's 39 million acres of agricultural land make it a hotbed for drone research and farm testing, and the state expects a 26 percent growth in developer jobs by 2024.

State of the App Economy

7,210
Current computing workforce

120
Undergrad CS degrees awarded in 2017

$73,336
Average computing salary

686
Current unfilled computing jobs

19.14%
Projected computing job growth by 2024

9.1% *(16.4% of rural population lacks access)*
Population without broadband access

Based in Grand Forks, the WalkSmart device is a health tracking system for people who use walkers. Every year, $34 billion is spent on fall-related injuries, and the WalkSmart attaches to a standard walker to track physical movement and help prevent injuries. The module tracks data and transmits it to an app that can be monitored by caregivers, doctors, and patients to improve mobility and safety.

The Botlink platform and app was developed in Fargo and provides users with the ability to safely monitor and control drones. In addition to offering aerial mapping, the app provides users with airspace alerts, weather advisories, and identifies controlled airspace to help users remain compliant with flight regulations.

Manufacturing and finance are key contributors to Ohio's economy. The Buckeye State is a national leader in the green economy and local developers are building new technologies to help industrial sectors operate more efficiently.

State of the App Economy

155,450
Current computing workforce

1,299
Undergrad CS degrees awarded in 2017

$85,015
Average computing salary

14,897
Current unfilled computing jobs

7.53%
Projected computing job growth by 2024

7.7% *(29% of rural population lacks access)*
Population without broadband access

Cincinnati's CitiLogics offers a forecasting platform to help city governments review water management data. The company offers PolarisTM, which is a data-driven situational analytics tool that gives water system operators easy access to system behavior. The tool helps users anticipate pipe breaks, provide rapid incident response, and mitigate risks to improve water quality.

Preemptive Solutions provides a range of protection tools to help app developers secure products from a range of hacking risks that could result in tampering, probing, reverse engineering, and malware insertion. The Mayfield Village company helps mobile app companies mitigate hacking risks, protect valuable intellectual property, and comply with privacy regulations.

Oklahoma

Though Oklahoma is a major producer of natural gas, the state has one of the nation's fastest-growing biotech industries. Oklahoma is often ranked as one of the most business-friendly states, and Oklahoma City is growing its tech industry with greater attention to coding and developer training opportunities.

State of the App Economy

34,600
Current computing workforce

471
Undergrad CS degrees awarded in 2017

$76,238
Average computing salary

2,333
Current unfilled computing jobs

6.13%
Projected computing job growth by 2024

23.1% *(54.2 % of rural population lacks access)*
Population without broadband access

Oklahoma City company Monscierge's platform helps hotels easily connect with guests to simplify their travel experience. The platform enables guests to conduct in-app reservation booking, provides guests with directions and location details, allows messaging with concierge staff, and the ability to review hotel folios and pay bills.

Founded by an Oklahoma City native, FreeCodeCamp offers an online platform that teaches coding and computer programming to users of all ages and technical abilities. The platform offers courses and certificates for users interested in developing apps and programming new technologies, as well as those simply interested in learning basic computer science skills. To date, the platform has helped roughly 9,000 campers around the country receive developer jobs.

Oregon

One of the most geographically diverse states, Oregon's economy is driven by various forms of agriculture, fishing, and hydroelectric power. The state is home to a thriving developer community, led by growth in Portland's "Silicon Forest" and Eugene's "Silicon Shire."

State of the App Economy

56,370
Current computing workforce

607
Undergrad CS degrees awarded in 2017

$91,631
Average computing salary

5,524
Current unfilled computing jobs

10.66%
Projected computing job growth by 2024

9.2% *(36.6% of rural population lacks access)*
Population without broadband access

The SCOUT Military app follows the mission to reward service members for their service. The mobile platform has crowdsourced more than 50,000 military-specific discounts and deals to help active service members and veterans find and redeem benefits. The app discovers discounts around the country, provides notifications if users are near businesses offering military discounts and sends alerts if online businesses offer new discounts and benefits.

Based in Portland, Sheer ID is redefining how brands create instant trust in a digital world. By verifying the credentials of individuals, employees, and businesses, SheerID's digital verification platform unites marketing, product, and finance leaders to deliver verified access to exclusive offers and experiences. Leading brands like Microsoft and Spotify rely on SheerID to cultivate trusted and authentic relationships with their users without friction or fraud.

Concentric Sky is a software design and development company based in Eugene. The company specializes in end-to-end software solutions and has developed software for an array of organizations, including a browsing feature for the Encyclopedia Britannica app and an analytics and reporting system for National Geographic's learning platform.
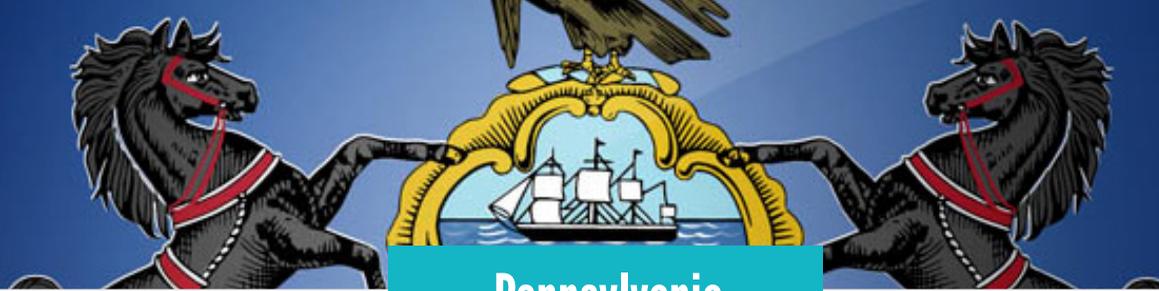
Pennsylvania

Home to more than fifty Fortune 500 companies, Pennsylvania is often viewed as a hub for innovation. Developers across the Keystone State have been driving software solutions in new industries like manufacturing, banking, and agriculture.

State of the App Economy

176,270
Current computing workforce

3,125
Undergrad CS degrees awarded in 2017

$88,553
Average computing salary

17,213
Current unfilled computing jobs

1.27%
Projected computing job growth by 2024

5.2% *(17.6% of rural population lacks access)*
Population without broadband access

Pittsburgh-based Conversant Labs provides the tools developers need to build robust conversational experiences for their users. The company is helping to increase the accessibility of our world by expanding the ways people can interact with products. The company developed the award-winning Yes, Chef!, a hands-free, voice-activated cooking app that dictates more than 350,000 recipes.

With more than 500,000 babies admitted to neonatal intensive care units (NICU) each year, Philadelphia startup Keriton developed a HIPPA-compliant platform and apps to help nurses and new mothers manage milk production for babies in the NICU. The company's Keriton Kare apps provide a real-time lactation analytics dashboard, feeding management system, and enables nurses to chat and share photos with new parents to help with milk production.

With operations in Conneautville, Project Hosts is a cloud solutions provider that specializes in providing security for mobile apps on the Microsoft Azure cloud platform. In addition, the company offers a 90-day cloud service engineer apprenticeship program for local college students that provides fully paid cloud service training, testing, and certifications and the opportunity for full-time employment upon completion.

Rhode Island's diversified economy is largely driven by tourism, manufacturing, and health services. The Ocean State has the nation's highest paid elementary school teachers and second-highest percentage of high schools offering AP computer science courses, providing new opportunities for the state's app economy workforce.

State of the App Economy

15,550
Current computing workforce

348
Undergrad CS degrees awarded in 2017

$93,547
Average computing salary

1,463
Current unfilled computing jobs

9.52%
Projected computing job growth by 2024

1.9% *(2.4% of rural population lacks access)*
Population without broadband access

Led by a team of farmers, chefs, and food systems innovators, the WhatsGood platform is helping to strengthen local food ecosystems and support urban farming and local food sourcing. The platform helps connect local farmers and purveyors with restaurants and wholesale purchasers, while their app serves as a virtual farmers market that enables consumers to easily buy from their community's farmers, fishermen, and artisans.

Based in Providence, Finnest offers kids aged 8 to 18 years old real-life money management skills combined with financial education. Finnest's mobile app and secure, pre-paid debit card allow kids to manage their money, establish budgets, and set savings goals. The app's engaging interface helps motivate good money habits, while parental controls ensure kids avoid costly mistakes.
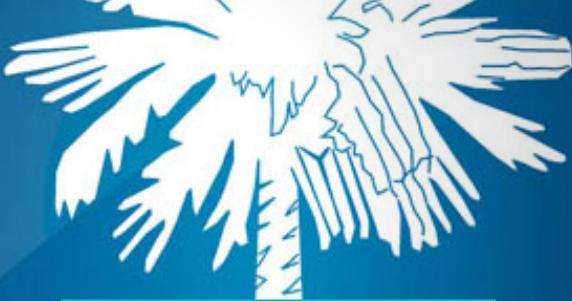
South Carolina

The service sector drives South Carolina's economy, accounting for 83 percent of the state's GDP. However, growth in South Carolina's tech sector has outpaced the national average, with startups, developers, and cybersecurity experts increasingly drawn to Charleston's "Silicon Harbor."

State of the App Economy

43,450
Current computing workforce

599
Undergrad CS degrees awarded in 2017

$79,429
Average computing salary

3,658
Current unfilled computing jobs

3.89%
Projected computing job growth by 2024

11.7% *(30.6 % of rural population lacks access)*
Population without broadband access

Based in Charleston, Sentar offers cybersecurity services and solutions to businesses and government agencies. Led by a team of cybersecurity experts with experience testing and securing targeted apps, computers, and networks, Sentar helps companies protect their valuable assets from malicious cyber-attacks.

Greenville-based, DirtJockey offers a web platform that helps businesses manage large-scale construction and infrastructure projects. The platform enables users to access equipment and machinery inventories, financial records to monitor project costs, and an integrated contact and project list to streamline sales.

Founded by former professional hackers for the U.S. government, Soteria uses their team's expertise to help businesses fight hackers. The Charleston-based company offers consulting and security solutions and works with businesses to design security programs that defend against cyber threats without disrupting business operations.
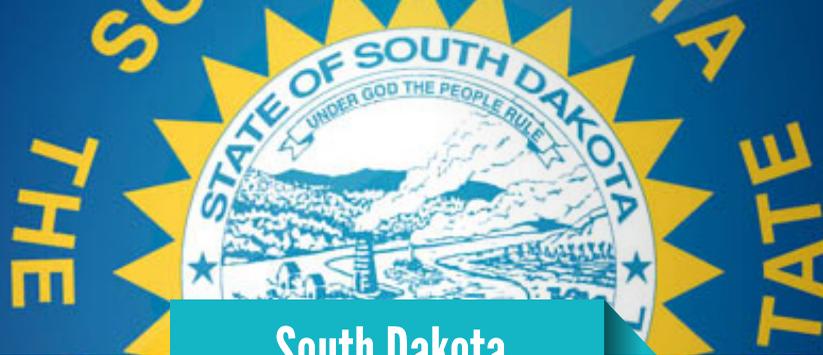
South Dakota

Home to Mount Rushmore, South Dakota is driven by its agriculture industry. Though South Dakota ranked last amongst states offering AP computer science courses, local developers have created new solutions to encourage STEM and traditional education and reignite growth in the developer workforce.

State of the App Economy

8,430
Current computing workforce

189
Undergrad CS degrees awarded in 2017

$74,335
Average computing salary

630
Current unfilled computing jobs

-1.66%
Projected computing job growth by 2024

11.9% *(25.3 % of rural population lacks access)*
Population without broadband access

Headquartered in Sioux Falls, Montessorium develops engaging educational apps for children and resources to help make the Montessori teaching method more accessible. In addition to apps for children, Montessorium also offers resources to help parents encourage engagement and learning, as well as videos to help teachers become better educators.

Developed by a high school student in Orient, South Dakota, the Calving Book app provides a streamlined mobile platform to help ranchers and beef producers track breeding, calving, and weaning records for cow herds. By storing all data on a secure cloud, the customizable app offers on- and offline access that enables users to show calf, cow, and sire information, calving schedules, and treatment details.

Tennessee

While Tennessee's traditional industries include agriculture and manufacturing, the state is building its reputation as a destination for tech and start-ups. When Chattanooga became the first U.S. city to offer publicly-owned high-speed internet, it quickly became a haven for telehealth and software development.

State of the App Economy

61,000
Current computing workforce

750
Undergrad CS degrees awarded in 2017

$79,536
Average computing salary

6,078
Current unfilled computing jobs

7.44%
Projected computing job growth by 2024

9.2% *(24.0 % of rural population lacks access)*
Population without broadband access

Medaxion offers an electronic health record system to help anesthesiologists document and communicate patient data with healthcare teams. The Nashville company's mobile platform allows anesthesiologists to enter and securely share patient procedure times, vital charts, and notes with clinical and administrative staff to streamline communication during surgery and patient recovery to manage data flow and avoid costly mistakes.

Chattanooga-based **VirtuWell's** telehealth platform enables remote users to securely connect with board-certified nurse practitioners at any time to receive healthcare guidance for a variety of ailments. Through the platform, nurses can diagnose symptoms, provide custom treatment plans, and send prescriptions to a local pharmacy. In addition to accepting insurance plans, even uninsured users can use the telehealth platform for a low cost.

With the goal to make Tennessee the most startup-friendly state, **Launch Tennessee** is a public-private partnership supporting tech entrepreneurs at every stage. Through collaboration with private businesses, capital investors, and local government, Launch Tennessee provides a state-wide resource center that offers startups what they need to grow, including curriculum, mentorship, business training, and an entrepreneurship network.

Texas

A leader in farm acreage and agricultural outputs, Texas is ranked first for revenue generated from total livestock and livestock products. Texas is also a hub for technology development with developers and startups working in a myriad of industries.

State of the App Economy

376,430
Current computing workforce

3,053
Undergrad CS degrees awarded in 2017

$94,007
Average computing salary

36,950
Current unfilled computing jobs

15.61%
Projected computing job growth by 2024

6.6% *(27.8% of rural population lacks access)*
Population without broadband access

Vital Herd uses technology to help identify animal illness and reduce livestock deaths. The Austin-based company uses IoT sensors placed in an "e-pill" ingested by cows to monitor core temperature, heart rate, respiration rate, and other vitals. The data provided from the sensor helps assess bovine health and prevent the spread of disease.

Based in Houston, Your App Lady offers consulting and training services to help communities better utilize apps. An expert in the use of mobile devices for children and adults with disabilities, the company's founder consults with app developers and tech companies to create accessible, effective apps for all users. In addition, Your App Lady helps train educational institutions and families to find apps and products that support specific child or student needs.

Austin's Medici app offers a mobile communication tool that securely connects doctors and patients via their mobile phones. The chat-based app, which includes video chat, enables patients to conveniently communicate with their doctors at any time while providing doctors the freedom to extend care and guidance outside traditional hospital hours.

Often ranked as one of the best states to live, Utah has the nation's second fastest-growing population and a thriving computing workforce. The Beehive State is a center for transportation, education, and outdoor recreation, but the state's "Silicon Slopes" have made it a growing hub for developers and IT research.

State of the App Economy

50,530
Current computing workforce

2,315
Undergrad CS degrees awarded in 2017

$83,698
Average computing salary

4,257
Current unfilled computing jobs

24.82%
Projected computing job growth by 2024

3.5% *(27.8% of rural population lacks access)*
Population without broadband access

Headquartered in Provo, the Vivint.SmartHome platform helps users create a smart home through numerous services that provide home security, energy management, home automation, local cloud storage, and high-speed internet solutions. The company's Vivint Sky app allows users to control the features of the smart home like setting the thermostat, alarms, and programmable door locks.

1564B is a Salt Lake City-based technology consulting firm that offers local businesses marketing, content development, and presentation services. The company works with local businesses, tech companies, and developers to build the skills, understand the trends, and engage in the practices that deliver marketing success.

Vermont

The nation's second least populous state, Vermont's economy is driven by manufacturing, agriculture, and healthcare. Recent state legislation authorizing reimbursement for telehealth services has laid the groundwork for a growing number of Vermont developers to create innovative software solutions that improve remote and public health.

State of the App Economy

7,850
Current computing workforce

163
Undergrad CS degrees awarded in 2017

$81,113
Average computing salary

451
Current unfilled computing jobs

4.71%
Projected computing job growth by 2024

16.2% *(25.3% of rural population lacks access)*
Population without broadband access

Burlington-based social impact company ThinkMD works to improve global healthcare delivery by sharing clinical knowledge with untrained and volunteer healthcare workers. Their MedSinc digital platform provides clinical-like assessments and treatment recommendations to support minimally-skilled frontline workers in underserved communities while enabling users to input regional public health data to grow a global medical knowledge network.

The Southwest Vermont Medical System in Bennington developed a telehealth program to provide intensive and highly-specialized care to out-of-reach patients. The program provides teleneurology treatment for stroke patients, video-enabled emergency telemedicine services, and a tele-ICU program that supports 24/7 remote monitoring without transferring vulnerable patients to distant specialty hospitals.

Virginia

Agriculture was once a key sector of Virginia's economy, but the state is now home to one of the nation's largest per capita computing workforces. Thanks to a growing number of incubators and startups, Virginia is on track to become a major tech hub in software development and drone innovation.

State of the App Economy

224,140
Current computing workforce

2,573
Undergrad CS degrees awarded in 2017

$102,773
Average computing salary

33,141
Current unfilled computing jobs

9.23%
Projected computing job growth by 2024

9.4% *(30% of rural population lacks access)*
Population without broadband access

Richmond-based health information management company secureHIM specializes in healthcare cybersecurity and privacy consulting. Through training, education, and consulting, secureHIM helps companies mitigate cybersecurity risks, manage healthcare compliance, and uphold HIPAA-compliant privacy standards.

The Airside Mobile Passport app helps airline passengers breeze through customs lines at international airports. Used by 25 major airports and seaports around the country and authorized by U.S. Customs and Border Protection, the mobile app enables eligible passengers to securely store traveler profiles, electronically submit customs declarations, and expedite processing of customs information.

Washington

Home to a strong aerospace industry and tech leaders like Microsoft and Amazon, Washington state also employs app developers and software designers in a multitude of sectors. Seattle rivals San Francisco as a leader for tech jobs, with a steady growth of developer jobs and workplace opportunities.

State of the App Economy

205,480
Current computing workforce

1,345
Undergrad CS degrees awarded in 2017

$100,466
Average computing salary

15,616
Current unfilled computing jobs

9.73%
Projected computing job growth by 2024

2.1% *(10.3% of rural population lacks access)*
Population without broadband access

Convoy provides a website and app that enables businesses to book trucks to deliver their products. Faster than traditional freight brokers, the Convoy app works for businesses of all sizes and provides access to more than ten thousand trucking companies, live monitoring of shipments, high-accuracy arrival times, and insights to improve supply chain performance. This helps match freights with effective routes to reduce the number of empty trucks and lower fuel consumption, traffic, and carbon emissions

Call Control helps users prevent phone phishing and robocalls. The Bellevue-based company receives more than one million reports of unwanted calls per month, and their Call Control app uses patented technology to help subscribers mitigate nuisance robocalls and unwanted calls from solicitors.

West Virginia

West Virginia's economy is largely dependent on logging and coal mining, but the state's workforce has increasingly turned to software development to bolster local industries. Businesses throughout the state have been developing new apprenticeship programs to train workers in coding and software development to prepare for a nearly 10 percent growth in computing jobs by 2024.

State of the App Economy

11,170
Current computing workforce

675
Undergrad CS degrees awarded in 2017

$72,589
Average computing salary

1,087
Current unfilled computing jobs

9.85%
Projected computing job growth by 2024

21.3% *(37.4% of rural population lacks access)*
Population without broadband access

Led by West Virginia University graduates, VEEPio developed an app plug-in that allows users to identify and purchase items found on social media. The company offers a free VPKit software development kit that enables businesses to integrate the VEEPio software into their apps and gives users the ability to engage with interactive content – product prices, restaurant locations, event descriptions – through links in an image or video.

CentralApp offers software consulting and contracting for businesses around West Virginia. In addition to providing enterprise data management and platform customization, the company offers a tech and entrepreneurship apprenticeship for economically challenged communities throughout Appalachia. Successful apprentices are invited to join the CentralApp team as software developers.

Wisconsin

Known as "America's Dairyland," Wisconsin has also been named a leader in quality healthcare quality, citing strong performance in acute and chronic care. Developers around the state have been building innovative apps and technologies to establish health care equity for all residents, including the more than 40 percent of rural residents without broadband connectivity.

State of the App Economy

84,530
Current computing workforce

1,039
Undergrad CS degrees awarded in 2017

$76,799
Average computing salary

7,277
Current unfilled computing jobs

4.61%
Projected computing job growth by 2024

13.7% *(43.7 % of rural population lacks access)*
Population without broadband access

Based in Madison, Propeller Health's digital platform seeks to enhance the quality of life for people with chronic respiratory diseases. Propeller's sensors attach to inhalers and communicate data to an easy-to-use mobile app to help users track their symptoms and manage treatment for their asthma and chronic obstructive pulmonary disease (COPD). The company is dedicated to proving the value of connected medicine – its users have seen a nearly 80 percent reduction in inhaler use and a roughly 50 percent increase in asthma control.

Wyoming

Though Wyoming is the nation's least populous state, its developer community continues to grow. Recent state legislation has secured Wyoming's place as a haven for blockchain innovation, while developers have supported growth in the state's healthcare industry through software solutions for the large rural population without access to hospitals or healthcare providers.

State of the App Economy

2,800
Current computing workforce

25
Undergrad CS degrees awarded in 2017

$68,246
Average computing salary

287
Current unfilled computing jobs

7.50%
Projected computing job growth by 2024

22.5% *(56.5% of rural population lacks access)*
Population without broadband access

The Wyoming Department of Health launched the Family Health app to connect families with local healthcare resources. The app includes features that enable users to track their height, weight, and vaccinations or share health vitals with doctors and researchers for population health management. The app links users with resources like the Wyoming Quit Tobacco Program, Wyoming Cancer Resource Services, and Wyoming Quality Counts to bridge the gap in the state's rural health access.