

# Apprenticeship Builds Top Cybersecurity Pros With CompTIA



## CHALLENGES

- The need to create a skilled cybersecurity workforce and develop new talent from the ground up to meet the growing challenges of the cybersecurity landscape.
- The need to give budding cybersecurity professionals hands-on work experience to build both their skills and employability.



## SOLUTIONS

- Cybersecurity contractor CyberDefenses created an Apprentice Program to get the right kind of aspiring IT pros CompTIA certified and working in a real-world cybersecurity environment within nine months.
- In the program's first iteration, six chosen apprentices received in-depth training on CompTIA A+ and CompTIA Security+ certifications as well as guided, in-the-field cybersecurity mentoring to six chosen apprentices.



## RESULTS

- All six apprentices received their CompTIA A+ and CompTIA Security+ certifications, and succeeded at working in the field managing CyberDefenses' clients' cybersecurity postures.
- The apprentices are able to successfully troubleshoot and solve cybersecurity-related issues on clients' network only a few months after beginning the program with only a very basic IT background.



## CYBERDEFENSES

CyberDefenses, located in Round Rock, Texas, is a cybersecurity services provider, consulting and training firm that supports both public sector/government and private sector clients. The company was started by its founder Randell Casey in 2001. In 2018, after years of offering cutting-edge security and consulting resources to clients, the company launched its first apprenticeship program to build the sort of skilled cybersecurity professionals necessary to adequately protect its clients' networks.

“The Apprentice Program will help address the lack of cybersecurity talent in the marketplace and it will also give people who are looking for a way to get into the space a very strong, concrete way to do so with a solid framework.”

**- Armando Ordonez, CEO, CyberDefenses**

## LESSONS LEARNED

Being able to turn six apprentices with relatively low levels of cybersecurity knowledge into skilled cybersecurity professionals in only a few months, CyberDefenses demonstrated the efficacy of the hybrid certification/mentorship model.

CyberDefenses learned that teaching fundamental skills based around CompTIA A+ and CompTIA Security+ could successfully prepare apprentices for in-the-field mentoring, which would increase their job-readiness and employability.

CyberDefenses proved that it is possible to create top-tier cybersecurity talent quickly, with proper mentoring and certification.

# Apprentice Program Builds Top Cybersecurity Pros with CompTIA Certs

In 2001, Randell Casey, a military cybersecurity veteran, founded CyberDefenses as a cybersecurity service provider to meet a need that was rapidly emerging. The online world, he recognized, was going to be the new frontier for business and government – and because of that, would be a prime target for any number of malicious entities.

CyberDefenses began offering consulting services and guidance to government and private sector clients alike. And as computing technology evolved, Casey's suspicions were confirmed. Over the decades, the need for cybersecurity talent grew.

But the number of IT pros capable of performing the increasingly technical range of tasks did not. As the new millennium continued on, Casey saw a huge shortage of appropriately skilled IT professionals.

"Today, just in the Federal space, and not counting the private sector, if you take that and look at it from the business perspective we're really just out there competing for the same small pool of talent," - Casey said.

Casey decided it was time for CyberDefenses to take a more hands-on approach to building tomorrow's best, most reliable IT security professionals.

"The idea was, let's put together an apprentice program which will serve two

key missions," said **Armando Ordonez**, CEO at CyberDefenses. "It will help address the lack of cybersecurity talent in the marketplace and it will also give people who are looking for a way to get into the space a very strong, concrete way to do so with a solid framework."

It was with that in mind that CyberDefenses put out the call for their highly-competitive, highly-rewarding Apprentice Program – which would provide those who came on board with unmatched hands-on cybersecurity experience and industry-standard CompTIA certifications. And the opportunity to be hired right off the bat – an attractive enough incentive to bring in tons of applications.

But only six were chosen – one coming from as far as Washington, D.C. – led by the promise of unparalleled cybersecurity credentials and training, if they could prove they were willing to put in the work.

## Different Backgrounds, One Common Goal

Living in the Washington, D.C. area, Josh Wilson has never been far from the world of cybersecurity. While he's out socializing, it's not uncommon for him to find himself among government contractors, listening to them casually discuss the mechanics of a hack attack, and bouncing around ideas on what it would take to secure an enterprise here or an agency there. But while such conversations had always piqued his fascination, he found playing an active role in this exciting, high-level world of cybersecurity to be just out of

reach. Wilson had graduated college with a humanities degree – and knew that to really get serious about technology he'd need more formal training. And that, he feared, would require a big financial investment.

It had been an on-and-off point of discussion with his friend and cybersecurity pro who Wilson had met through their shared practice of Kung Fu.

"We were just kind of chatting and he said, 'At my company, we're opening this security Apprentice Program ... I know you were interested in breaking into this industry, so I figured this might be a good fit for you.'"

As Wilson caught word from his Kung Fu buddy about the opportunity, his soon-to-be colleagues at CyberDefenses were also hearing about it.

Army veteran Julian Collins was a computing hobbyist who had just completed his degree in IT security when a professor sent him an email informing him about the Apprentice Program opportunity an hour away from his home town of Harker Heights, Texas.

David Dinh held a bachelor's degree in Management Information Systems, but his experience of managing technology in the professional world was limited to a summer spent shadowing an IT pro in a volunteer capacity. Just down the road from CyberDefenses HQ, he heard about the opportunity through a friend of a friend.

"CompTIA gives us the knowhow we need on a daily basis. I've got nothing but love for what CompTIA does." – **Josh Wilson**, Cybersecurity Apprentice, CyberDefenses

## THE FULL STORY

Family circumstances brought Zeke LaFleur back to Texas, the state of his birth, with only \$30 in his pocket. He had begun building his knowledge pursuing a computer science degree while working part-time at Best Buy and a local gym, when an acquaintance forwarded him an email about the Apprenticeship Program.

Michael Pfeiffer had gotten his bachelor's degree in business, but it hadn't yielded the results he'd hope for in terms of meaningful employment. He leveraged his self-taught IT expertise into a job at Dell, but was still looking for a career – not just a way to make money. He heard about the Apprenticeship Program from his social circle, and it looked like the perfect way to get the training and CompTIA certification he needed to take his first few steps down a real career path.

And Christian Woodley was working in sales at his family business in Round Rock, Texas when he heard about the unparalleled opportunity to get a foot in the door of the cybersecurity world.

With different backgrounds, life experiences, financial circumstances and levels of technical expertise, all of these applicants shared one characteristic – they were serious about going deep into the world of cybersecurity, and willing to put everything else on hold to do it. But first they needed to prove they had what it took – and the application process was no cakewalk. CyberDefenses Founder Casey made certain that was the case. Casey knew, early on in the history of enterprise computing, that cybersecurity was not to be taken lightly.

### CyberDefenses and CompTIA: A Synergy Long in the Making

Colin Tepfer, Director of Education at CyberDefenses, led the roll-out of the Apprenticeship Program and brought an unmistakable enthusiasm to the project.

“I am very excited, very passionate about this program – it is one of the flagship offerings from our education team; one of the opportunities with the greatest potential for what we're doing in education at CyberDefenses,” **Tepfer** said.

For the initial cohort of the program, CyberDefenses wanted apprentices who could match Tepfer in his excitement. And they wanted candidates who Tepfer and his team could be confident could do the work. Apprentices in the program are brought in as employees and find themselves soon working with clients, once their skills and CompTIA certifications are up to speed. So CyberDefenses had to be sure they could represent the organization with their clients when the time came. That all added up to a very rigorous selection process.

Candidates applying for a chance to take part in the inaugural Apprenticeship Program were asked to give presentations on an area of cybersecurity that interested them. For Wilson, just as cybersecurity was never far from Wilson's mind living in D.C., neither were elections. He gave a presentation that combined his two interests.

But CyberDefenses wanted more than just a demonstration of their applicants' passion. They wanted to see how good they were at thinking on the fly. To get a feel for his problem solving skills, the panel presented Wilson with a Sudoku puzzle. Happily, this is the kind of test Wilson both excels at and enjoys.

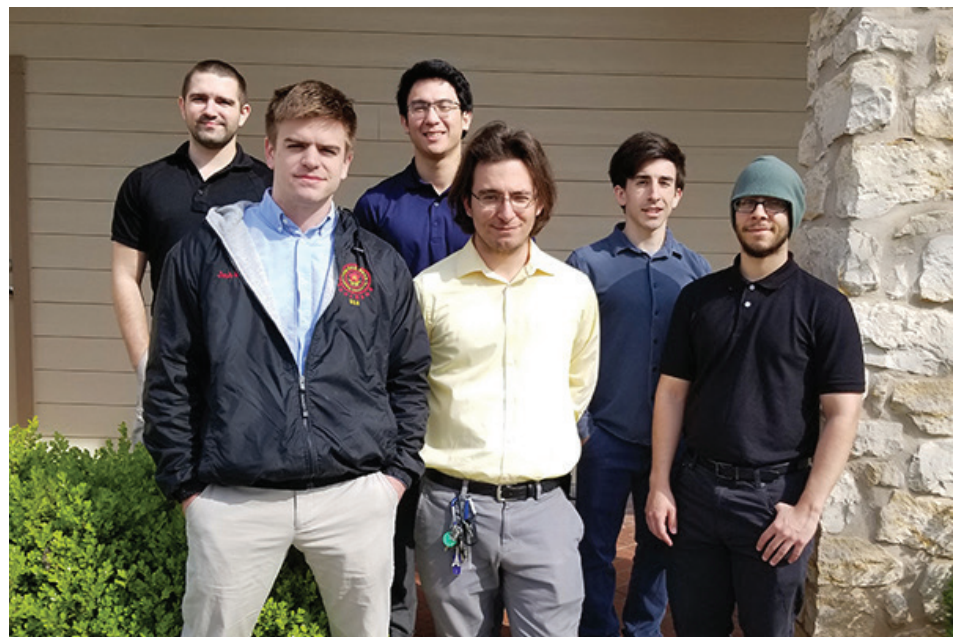
“I love Sudoku puzzles,” Wilson said. “I've done them every morning for the past five years so it was a pretty quick solve for me.”

Wilson was selected for the apprenticeship and relocated to join CyberDefenses in Texas. Alongside the five Texans who would become some of his closest friends, he would earn his CompTIA certifications, immersed in the world of cybersecurity and pursue the career path of their dreams. The Apprenticeship Program's first cohort, is collectively and colloquially known as the SWAT team.

### The SWAT Team: Assembled and CompTIA A+ Certified

Wilson, like the other apprentices, had some experience with the computing basics, but there was a lot he hadn't gained from tinkering with computers on his own. In January, when the SWAT Team began its collective study for CompTIA A+, he found himself suddenly learning a whole new computing vocabulary. Within weeks of serious studying, he knew the acronyms, he got the nuances of hardware functionality. And in late-February, he walked into the testing center to prove it.

“I sat down at the computer and I was sweating bullets for a few minutes until I started looking through the exam and said, ‘wait I know all this.’” Wilson said.



When he got his scores back, he found that the guided study had paid off. Wilson had the proven foundational knowledge on which he could build an IT career. He, along with the rest of his cohort, had passed the exam on the first attempt.

“It was really gratifying to get that first certification,” **Wilson** said.

And just taking that first step, The SWAT Team knew they had a foundational understanding of IT that would set them up for success.

“CompTIA gives you a basic skill set with its certs,” **Pfeiffer** said.

But CyberDefenses Apprentices Program is structured to move at a rapid pace – and before he knew it, Wilson and his cohort were already digging into the higher-level material, and putting it into practice.

### **CompTIA Security+ and the Road to Cybersecurity Success**

In May, The SWAT Team began an in-depth study of CompTIA Security+. And it was a study that went beyond the books. The apprentices were being shown tickets for phishing scams. They were picking apart email headers and embedded links to determine their authenticity. And they were being guided through the kinds of investigative practices critical to maintaining a business’s cybersecurity posture.

By June, the SWAT Team was also CompTIA Security+ certified, and just as they had done when they received their CompTIA A+ certification, they passed on their first attempt. Now they were ready for the next stage. In fact, Wilson and one other apprentice had already begun working directly with one of CyberDefenses’ clients – monitoring network traffic and doing his part to secure the infrastructure.

There in the Security Operations Center, every day has been a learning experience – and it has also put his CompTIA-certified knowledge to the test. One day, pouring over a log file, he noticed something trying to VPN out of a client network. It triggered his mental alarm. He quickly installed an intrusion detection sensor that set into applied practice both his CompTIA A+ and Security+ knowledge.

“It was a combination of, ‘ok we’re going to put together this machine [using CompTIA A+ knowledge]’ and also, using my CompTIA Security+ knowledge, we need to fit this machine into a very particular place in the client network to make sure we’re securing it against outside threats,” Wilson said.

And other members of The SWAT Team attest to amassing an amount of knowledge and experience they’d never expected in a short period of time.

“The things I’ve learned feel too long to list,” Dinh said.

“My knowledge of technology has grown massively in the last eight months,” Lafleur said. “I have two subnets in my apartment. I constantly research new security ideas. I have a password manager that requires two-factor authentication and the database is in the cloud where I can access it from anywhere. I’m always hungry for gathering new information.”

The sort of hands-on experience The SWAT Team is continuing to be exposed to is what Casey sees as a critical part both of CyberDefenses’ apprenticeship program and cybersecurity job readiness in general. The right internship, mentorship or apprenticeship can let CompTIA-certified cybersecurity pros get the real-world experience that any future employer will appreciate.

“It’s like having a doctor that’s been only trained in a classroom to perform your heart surgery,” Casey said. “Do you want to be their first patient?”

### **Partnering to Build a Skilled Workforce for a Cybersecure Future**

Cybersecurity threats show no sign of slowing down – and so Casey, Ordonez, Tepfer and the rest of the CyberDefenses team see building tomorrow’s skilled, certified, experienced cybersecurity pros as only growing in importance.

“I think the problem [of cyberattacks] is so massive that we feel cybersecurity in the long-term will have to become almost like a public utility,” Casey said.

And that’s a future the six members of The SWAT Team are getting ever-more prepared for. Not only that, but now that they’ve gotten a feel for this action-packed career, a few of them are using the knowledge they’ve amassed to become teachers themselves.

Back in the Washington, D.C. area, a friend of Wilson’s has been working through the CompTIA Security+ exam. As Wilson sets his sights on ever more advanced facets of the cybersecurity landscape, he’s helping his buddy learn – just as he so recently did -- the foundational knowledge to do the job.

“CompTIA gives us the know-how we need on a daily basis,” Wilson said. “I’ve got nothing but love for what CompTIA does.”

Pfeiffer has likewise aimed to help others get their foot in the door of the vibrant IT workforce with CompTIA – and his aspiring IT protégé is even closer to home.

“I’ve passed my books onto my little brother in hopes he can enjoy a similar career,” Pfeiffer said.

CompTIA is the voice of the world’s information technology (IT) industry. Its members are the companies at the forefront of innovation and the professionals responsible for maximizing the benefits organizations receive from their investments in technology. CompTIA is dedicated to advancing industry growth through its educational programs, market research, networking events, professional certifications, and public policy advocacy. For more information, please visit [CompTIA.org](https://www.comptia.org).

