

IoT OFFERS POTENTIAL CAREER SPECIALIZATION AND, NOW, CERTIFICATION

More connected devices mean more forensic nuance, and Paraben aims to enable customers and careers with IoT education.

BY JARED COSEGLIA

The growth of the internet of things (IoT) market is a direct result of the downturn in smartphone sales over the last few years. The Guardian recently reported the global smartphone market as having “50 percent annual sales growth between 2009 and 2013,” while growth in 2016 was only 2.5 percent and 2017 trending to 1.7 percent growth. Meanwhile, there will be 8.4 billion IoT devices in use at the end of 2017.

The corporate chase to gain early market share in IoT technology has created a marketplace flooded with devices that have unique security vulnerabilities and data extraction processes, quite the opposite of the mobile device market which is dominated by Android and iOS technology. “People are keeping their phones for three plus years, more than before,” says Amber Schroader, CEO and president of Paraben Corporation. “The greatest device evolution is happening in IoT.”

Paraben is an investigative technology company providing software for mobile forensics, computer forensics and now IoT devices. Its soon-to-be-

released IoT Analysis Certification is taught directly by company founder Schroader. Schroader kicked off Paraben’s inaugural IoT training and certification event at the NATO Cyber School in Europe this September with over 12 countries participating, and she is confident that forensic analysis of IoT devices will become a cornerstone of Paraben’s technology capability and identity.

The exponential proliferation of devices connected to the internet and each other is slowly shifting the focus of data security and collection from traditional corporate network environments to a variety of personal devices at home and, perhaps unknowingly, in the workplace. “How many companies do you know that ban Fitbits in the workplace?” asks Schroader.

While there are some reported outbreaks of Fitbit prohibition across the country, it is certainly not a worldwide security trend reaching the boardroom. Schroader has always chased “what’s next” throughout her career in forensic technology, and as the chief architect responsible for the



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design of Paraben’s extensive line of digital forensic solutions, Schroader aims to pioneer career paths in IoT cyberforensic specialization beginning with her own.

IoT device classification can be broken down into various phyla: home (Echos, Xboxes, Nests), human (Fitbits and other wearables), city (traffic and street lights) and industry (driverless cars, ICS). There are likely other ways of compartmentalizing devices, but for now, Paraben is focused on the home and human groups.

“Home and human IoT devices will soon outnumber smartphones 15 to 1,” proclaims Schroader, “and the devices of our lives do not care what industry you are in.” This focus on consumer market technology will steer much of the education and hands-on training students will receive in the Paraben IoT Analysis course.

Paraben’s constantly evolving portfolio of device specialization currently includes the Xbox, DJI drones, Android Wear, Fitbit and Amazon Echo. Students will learn how to access each device’s different data storage capacity, capability and metadata and manage security protocols and hubs. “Students will walk away from the training knowing what data looks like and what holes exist in the security,” says Schroader.

Paraben’s website outlines a vast amount of discoverable information available for extraction from each of these home or human devices. Fitbit data includes exercise routes, their times and geotagging, as well as food logs including brand tracking. Echo data can include audio recordings of a user’s questions to Alexa. Drone data includes a detailed Flight Record List with metrics ranging from duration, distance, latitude and longitude to horizontal and vertical speed.

Paraben has moved deep into home and human IoT for a variety of reasons, not the least of which is to provide enriched career pathways for the growing community of cyberforensic professionals around the globe. IoT device technology is somewhat similar to smartphone forensics, an area where the organization has been

deeply focused and also offers training and certification through its Mobile Fast Track course. Existing forensic professionals will be qualified to evolve with the tools we most use every day and everywhere by parlaying smartphone forensic knowledge into home and human IoT devices.

“Consider a city’s water filtration systems. They are IoT, but that is a highly specialized system and not everyone is going to be qualified or needed to do that,” says Schroader. The community of forensic and security professionals may be able to capitalize on nuanced IoT training as broader potential demand for these skills and services accelerates with the consumption of IoT home and human devices.

Jumping right into Paraben’s IoT Analysis Certification with no other exposure to its tools may be premature. “Most people start with E3 first because it is data they are used to seeing versus smartphone data which looks very different,” advises Schroader. For a novice in Paraben’s technology, the E3 Training Passport will give you five days of hands-on classroom training that includes the Mobile Fast Track curriculum. “Our mobile certifications are a good place to start to dip your toe in more unique IoT areas,” states Schroader.

There are some core principles Paraben maintains regarding its training and certification standards. “Everything is very hands-on,” says Schroader. In an effort to maintain the highest levels of interactivity, there are never more than 15 students in an in-room training. Training occurs

throughout the world annually, with at least 12-15 domestic locations with additional opportunities internationally. Institutions or individual students are recommended to reserve training seats no less than a month in advance to ensure availability. Training is designed for all employment verticals including corporate, law enforcement, military and consulting firm professionals. Paraben will also offer three E3 Training Passports as part of the 2018 TRU Scholarship Program.

As Schroader begins to once again reinvent herself, her technology and the focus of the next chapter of her career, she continues to give herself this advice: “I need to think less about the career of my parents and more about the career that’s going to help my parents in their old age.”

Many IoT devices in the consumer marketplace have been produced with a focus on being first to market and are perhaps not the most privacy-savvy or securest devices. The result of an IoT consumer arms race is an opportunity for cyberforensic professionals to be first to market in IoT specialization.

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