

# Michael J. Mitchell, Ph.D.

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## Summary

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- Extensive industry experience spanning from academic research to startups, to enterprise development.
- Researched, developed, and implemented solutions in AI, security, telemetry, cloud, accessibility, & IoT domains.
- 22+ patents granted, 10+ patents pending; 10+ publications; dozens of open-source projects, articles & tutorials.

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## Education

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- **Ph.D. Computer Science**, May 2015, Florida State University, Tallahassee, FL, GPA 3.8.
- **M.S. Computer Science**, August 2011, Florida State University, Tallahassee, FL, GPA 3.8.
- **Computer Science/Management Information Systems**, 2001-2005, Iowa State University, Ames, IA.

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## Work Experience

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**MTS (Principal+), Software Engineer**, CX Lab, T-Mobile USA. Bellevue, WA. 2019 – Nov 2023

- Directed research & development efforts for Customer Experience (CX) Lab developers and contractors.
- Developed dozens of solutions & prototypes within AI/ML, AR/VR, Web 3, security, & SRE domains.
- Centralized & optimized telemetry collection, aggregation, visualization, monitoring, & anomaly detection.
- Developed & collaborated on corporate-wide standards, initiatives, review boards, & training modules.
- Developer relations & evangelization, tech talks & instruction on topics like AI, DevOps, Docker, & telemetry.

**Principal Software Engineer**, CX Lab, T-Mobile USA. Bellevue, WA. 2016 – 2019

- Directed day-to-day development, ops, & testing for on-shore/off-shore team of developers and contractors.
- Developed dozens of web, mobile, & IoT POCs within telemetry, metrics, security, testing and automation.
- Utilized open-source & off-the-self software to replace multiple 3rd party contracts; annual savings \$1M+
- Designed, developed, & deployed Device Matrix, a comprehensive remote device access & CI/CD platform.
- Developed telemetry platform collecting millions of daily user experience data points.

**Sr. Software Engineer**, QoE Lab/Product Realization, T-Mobile USA. Bellevue, WA. 2015 – 2016

- Designed, developed, and deployed comprehensive mobile device security & CPNI/PII leak detection test suite.
- Prototyped mobile app static analysis and privacy leak detection via device logs and over network.
- Designed and developed numerous product testing tool prototypes and proof-of-concepts.
- Prototyped novel system for ad-hoc synthetic user experience testing during massive public gatherings.
- Utilized novel indoor/outdoor context detection methods to enrich radio telemetry and diagnostic data.

**Graduate Researcher**, Computer Science Department, Florida State University. Tallahassee, FL. 2009 – 2015

- Directed research of 8-10 students annually on topics in security, privacy, operating systems, and data storage.
- Designed and implemented mobile security system to provide secure input and prevent sensitive data leaks.
- Designed and executed three-month human subjects tablet usage and privacy practices monitoring system.
- Co-designed malware detection system to assess security impacts of Android vendor customizations.
- Designed and developed context-aware health monitoring and emergency alert mobile framework.

**Software Developer/Founder**, Mitchtech, LLC. Tallahassee, FL. 2008 – 2015

- Developed over a dozen Android applications with over 500,000 market downloads.
- Lead team of Linux developers and collaborated on multiple software and hardware start-up ventures.
- Consulted on web development, networking, and Windows/Linux system administration.

**Grad TA/Instructor**, Computer Science Department, Florida State University. Tallahassee, FL. 2009 – 2012

- Developed course materials, taught undergraduate courses, and lectured graduate computer science courses, including: Kernel/Device Drivers, Android Programming, Object-Oriented C++, and Business Applications.

**Software Developer**, Catchwind Mobile Marketing. Des Moines, IA.

2005 – 2007

- Served as lead developer, system administrator, and tester for start-up mobile marketing software company.

**Network Administration Intern**, Briggs and Stratton Corporation. Murray, KY.

2004

- System/network administration of Windows/Novell network for 2,000+ users and operated Tier II help desk.

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#### Selected Patents

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- **Ad Campaign Predictive Validator** (11601828), 2023.
- **Mobile Device Testing on User Class** (11290907), 2022.
- **Mobile eSIM Switching Platform** (11129026), 2021.
- **Honeypot Adaptive Security** (11075946), 2021.
- **Adaptive Software Testing** (10846206), 2020.
- **Echolocate Spectrum Analyzer** (10827168), 2020.
- **Continuous Integration Testing for Network-based Applications** (10664388), 2020.
- **Systems and Methods for Improved Uptime for Network Devices** (10623166), 2020.
- **Context-based Device Testing** (10521335), 2019.
- **Indoor/outdoor Coverage Detection Based on Sensor Inputs** (10506372), 2019.
- **Voice User Interface for Data Access Control** (10496363), 2019.
- **Voice User Interface for Device and Component Control** (10334415), 2019.
- **Local Monitoring Cell Base Stations** (10440597), 2019.
- **Cellular Base Station Monitoring** (10397815), 2019.
- **Distributed Testing of Wireless Networks** (10382922), 2019.
- **Obfuscation of Sensitive Human Perceptual Output** (10025952), 2018.
- **Application-level quality of service testing system**, (9843943), 2018.

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#### Selected Publications

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- **Cashtags: Protecting the Input and Display of Sensitive Data.** Michael Mitchell, An-I Wang, and Peter Reiher. *Proceedings of the 24th USENIX Security Symposium, 2015.*
- **Mobile Usage Patterns and Privacy Implications.** Michael Mitchell, An-I Andy Wang, and Peter Reiher. *Proceedings of the IEEE 2015 International Workshop on the Impact of Human Mobility in Pervasive Systems and Applications (PerMoby), 2015.*
- **Systematic Audit of Third-Party Android Phones.** Michael Mitchell, Guanyu Tian, and Zhi Wang. *Proceedings of the 4th ACM Conference on Data and Application Security and Privacy (CODASPY), 2014.*
- **TrueErase: Per-file Secure Deletion for the Storage Data Path.** Sarah Diesburg, Christopher Meyers, Mark Stanovich, Michael Mitchell, Justin Marshall, Julia Gould, An-I Andy Wang, and Geoff Kuenning. *Proceedings of the 2012 Annual Computer Security Applications Conference (ACSAC), 2012.*
- **ContextProvider: Context-Awareness for Medical Monitoring Applications.** Michael Mitchell, Christopher Meyers, An-I Andy Wang, Gary Tyson. *Proceedings of the 33rd International Conference of IEEE Engineering in Medicine & Biology (EMBC), 2011.*

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#### Certifications, Licenses, & Awards

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- FAA Part 107 Drone Pilot
- Certified Information Systems Security Professional (CISSP), 2018.
- T-Mobile Enterprise IT Self Service VIP, 2016.
- Certified NSTISSI-4011, National Training Standard for InfoSec Systems Professionals.
- Certified CNSSI-4014, Information Assurance Standard for InfoSec Systems Officers.
- Runner up, FSU 3 Minute Thesis, 2014.
- Top Accelerator Team, Microsoft Imagine Cup 2013.
- Winner ACM D-FENSE (Offensive Security) Competition, 2013.
- Runner up, FSU Three Day Startup (3DS) Entrepreneur Weekend 2012 (EventSnapp).
- Runner up, Tallahassee Start-up Entrepreneur Weekend 2011 (SocialJukebox).
- Eagle Scout, BSA.