

# Michael Bartling

Graduate student in machine learning and security

## contact

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## programming

Python, C++, C++11  
Julia, Matlab, Verilog  
C, Embedded C, R

## OS

Debian, RHEL6-7,  
Windows, Android,  
 $\mu$ C/OS-II

## Interests

**professional:** optimization methods, theoretical security, machine learning, software architectures, data visualization

**personal:** cooking, 3D CG art (Blender), guitar, animation

## Education

- 2014–Present **M.S. + Ph.D** Computer Engineering The University of Texas at Austin  
Advisor: Mohit Tiwari  
Context-aware sensing, Dynamic malware analysis, Machine Learning.  
GPA: 3.8
- 2011–2014 **Bachelor of Science**, Summa Cum Laude Texas A & M University, College Station  
Electrical Engineering  
Specialized in Computer Engineering  
Sub-specialized in Signal Processing and Image Processing.  
GPA: 3.9
- 2009–2011 **Advanced High School Diploma** Texas Academy of Mathematics and Science  
UNT, Denton, Texas  
Graduated high school 2 years early to attend accelerated TAMS program.  
GPA: 3.89

## Experience

### Full Time and Internships

- 2014–Now **University of Texas** Austin, Texas  
*Graduate Research Assistant*
- Dynamic analysis of mobile malware on networks. Built user trace record and replay system for Android applications, injected key malware categories into common applications, designed intelligent anomaly detectors for Android system calls.
  - Context aware sensing. Automatic classification of user motion into activities based on smart phone accelerometers. Dynamically *learned* privacy preserving user motion models. Automatic fall prediction and detection. Inferring information across untrusted contextual boundaries.
- 2014–2015 **University of Texas** Austin, Texas  
*Graduate Teaching Assistant*  
Introduction to Computing

2012–2014	<b>Texas Instruments, EP Labs</b> <i>Summer and Winter Intern</i> Under Srinath Hosur and Arifon Xhafa	Dallas, Texas
	<ul style="list-style-type: none"> <li>• Digital pre-distortion design</li> <li>• RFSDK Software development + designed end-to-end experiment manager for software-hardware interfacing.</li> <li>• Designed intelligent LTE frame modeling and generation scripts.</li> <li>• Wireless Backhaul Project               <ul style="list-style-type: none"> <li>- Designed and optimized Line of Sight channel estimation drivers.</li> <li>- Designed and optimized Line of Sight 2x2 and 4x4 MIMO channel equalizer drivers. Conducted precision study on fixed point versus floating point implementations.</li> <li>- Helped formulate non line-of-sight transmitter chain on C6614 EVM</li> <li>- Designed and optimized Reed Solomon processing chain for TI C6614 EVM</li> </ul> </li> <li>• Ported Contiki OS to TI FRAM line microcontrollers.</li> </ul>	

## Noteworthy Projects

2013–2014	<b>Senior Design</b> Honors Project under Dr. Gregory Huff and Dr. Jean-Francois Chamberland Autonomous Mission Planning of RF Landscapes Designed robust map reconstruction algorithms (Extended block coordinate descent, Gaussian Mixture Models, and conic polynomial reconstruction) and application communication layer for autonomous quadcopter.	Texas A& M
2013-2014	<b>FrogSAT</b> Under Dr. Sunil Khatri Attempted to solve Boolean Satisfiability problem heuristically via Hadoop Map Reduce.	Texas A& M

## Awards

2015	<b>Dell Innovation Award: Hack TX</b> Distinguishing style and content in images: The ability to create any Instagram filter.	Austin TX
2015	<b>2nd Place MDP Hackathon</b> Accurate fall prediction and motion state regression using cellphone accelerometer information.	Athena Health, Austin TX
2014-Present	<b>Departmental Fellowship</b> Computer Architecture and Embedded Processing, The University of Texas	
2014	<b>Summa Cum Laude</b>	Texas A& M University, Electrical and Computer Engineering
2011-2014	<b>President's Endowed Scholar</b>	Texas A& M University, Electrical and Computer Engineering
2011-2014	<b>Boltzman Scholar</b>	Texas A& M University, Electrical and Computer Engineering
2008	<b>Eagle Scout</b>	Boy Scouts of America

## Courses

- Convex Optimization

- Large Scale Machine Learning
- Real Time Operating Systems
- Security: Hardware Software Interfaces
- Engineering Programming Languages
- Computer Graphics
- Computer Architecture
- Digital Signal Processing
- Image Processing
- Microprocessor Design
- Advanced Logic Design
- Ultrasound Imaging
- VLSI I