

# MICAH ELLIOT HALTER

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## EDUCATION

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AUG 2015 –  
MAY 2019

### **Bachelor of Science in Computer Science**

*Georgia Institute of Technology, Atlanta, GA.*

- Concentration in system architecture and theory
- Dean's List Fall 2015, Spring 2016, Fall 2016, Fall 2018, Spring 2019

## PROFESSIONAL EXPERIENCE

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JUN 2019 –  
PRESENT

### **Georgia Tech Research Institute – Research Scientist**

*Atlanta, GA.*

- Lead contributor to research projects sponsored by large entities DARPA, NIH, and ONR
- Wrote and published peer reviewed conference and journal papers to communicate research findings to the greater research community
- Contributed and participated in white paper and proposal writing to bring in more funding for new and on-going projects
- Delivered applied research projects to sponsors such as source code, web applications, and technical reports
- Used NetFlow data and machine learning in Python and scikit-learn to detect compromised machines on a network based off known blacklists and whitelists of IP addresses

JAN 2016 –  
MAY 2019

### **Georgia Tech Research Institute – Undergraduate Research Assistant**

*Atlanta, GA.*

- Lead contributor to research projects sponsored by large entities NIH and ONR
- Wrote and published a peer reviewed journal paper to communicate research findings to the greater research community
- Delivered applied research projects to sponsors such as source code, web applications, and technical reports
- Predicting crimes in Portland, OR using temporal and geographic features derived from crime statistics and GIS data

MAY 2016 –  
AUG 2017

### **The Boeing Company – Software Development Intern**

*Kent, WA.*

- Developed a security auditing tool suite for Red Hat Enterprise Linux 7 to maintain hardened security on classified servers
- Developed a web application in C#, HTML, and JavaScript to view and analyze network traffic
- Developed several system administration scripts as needed by team members to complete tasks such as emailing system logs and automatic server backups
- Organized and led a software development team to create a minimum viable product of a Kanban board web application
- Pitched the Kanban board prototype to management to form a team to continue development of the application after I left
- Documented and executed an upgrade plan for the company's identity management servers
- Developed an Outlook-integrated conference room mapping tool in C#

## PROJECTS

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### **SemanticModels.jl**

*Georgia Tech Research Institute.*

- Research funded by the Defense Advanced Research Projects Agency (DARPA)
- A category theory approach to defining metamodeling tasks for representing and composing scientific models
- A system for extracting semantic information from scientific code and reconciling it with conceptual descriptions to build a knowledge graph

### **Petri.jl**

*Software Development.*

- A stochastic petri net modeling framework for the Julia programming language

### **Corsair Database**

*Georgia Tech Research Institute.*

- Research funded by the Office of Naval Research (ONR)
- Developed a web application for viewing and analyzing sonar SAS data using Go, Python, and PostgresDB deployed with Docker and Drone.io
- Engineered a database for managing scientific experiments to utilize the speed and efficiency of using a rigid relational database, while being flexible enough to handle the changing data requirements of scientific experimentation

## RESEARCH

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### **Funding**

- 2019 – 2021 Performer, Office of Naval Research, *MCM Situational Awareness*, ≈\$375K
- 2018 – 2020 Task Lead, DARPA, *Artificial Intelligence Exploration - Automating Scientific Knowledge Extraction*, ≈\$1M
- 2018 – 2019 Performer, Air Force, *Network Risk Indication*, ≈\$135K
- 2016 – 2019 Performer, Office of Naval Research, *Performance Estimation of Underwater MCM Operations*, ≈\$990K
- 2015 – 2019 Performer, Office of Naval Research, *Automation for UxV-based Mine Countermeasures*, \$540K

### Peer Reviewed Conference Publications

- *A Compositional Framework for Scientific Model Augmentation*, **Micah Halter**, Christine Herlihy, James Fairbanks, Applied Category Theory, 2019

### Under Review Journal Publications

- *Accelerating Automatic Target Recognition Performance Estimation with a Relational Database for Synthetic Aperture Sonar*, James Fairbanks\*, **Micah Halter\***, Trevor Goodyear, Matthew Jackson, Brian O'Donnell, John Wilcher, Navy Journal of Underwater Research, 2018

### Under Review Conference Publications

- *SemanticModels.jl: A Julia Package for Scientific Model Augmentation*, **Micah Halter**, Sreenath Raparti, Kun Cao, Christine Herlihy, James Fairbanks, JuliaCon, 2019

### Posters

- *Scientific Knowledge Extraction, Augmentation & Analysis*, Micah Halter, James Fairbanks, Eric Davis, Clayton Morrison, Ryan Wright, DARPA Demo Day, Sep 2019

## COMMUNITY INVOLVEMENT

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AUG 2015 –  
MAY 2019

### Georgia Tech's Men's Ultimate Frisbee

*Georgia Institute of Technology.*

- Help with recruitment and teaching new players

## LANGUAGES & SKILLS

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Full Stack Development • System Administration • Database Design and Management

High Performance Computing • Machine Learning • Functional Programming • Category Theory

C/C++, Python, Go, Julia, Java, Scala, Perl, Bash, SQL, MySQL, PostgreSQL, LaTeX, HTML, CSS, JavaScript