Micah Elliot Halter

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Education

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

Jan 2016 – Present

Georgia Tech Research Institute – Research Scientist
Atlanta, GA.
- Lead contributor to research projects sponsored by large entities DARPA, NIH, and ONR
- 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
- 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

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

Funding
2018 – 2020 Task Lead, DARPA, *Artifical Intelligence Exploration - Automating Scientific Knowledge Extraction*, ≈$1M
2019 – 2021 Performer, Office of Naval Research, *MCM Situational Awarness*, ≈$375K
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

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

COMMUNITY INVOLVEMENT

AUG 2015 – MAY 2019 | **Georgia Tech's Men's Ultimate Frisbee**
Georgia Institute of Technology.
- Help with recruitment and teaching new players

LANGUAGES & SKILLS

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