

# Eric Cawi

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## Education

- George Mason University:
  - B.S. in Electrical Engineering, Applied Mathematics, May 2015
  - Honors College, University Scholar
- Washington University in St. Louis:
  - PhD. in Systems Science and Mathematics, expected completion 2020.
  - McDonnell International Scholars Academy- US Scholar, NSF Fellow

## Skills

- Computer programs: ArcGIS, Matlab/Simulink, Mathematica, ISE Design Suite 14.6, TexWorks
- Programming languages: Python, C, Matlab, MIPS Assembly, VHDL, Arduino, LaTeX
- Relevant Knowledge Areas:
  - Applied Mathematics: Ordinary and partial differential equations, numerical analysis, mathematical modeling, real analysis, simulation, trajectory optimization, probability
  - Signals and Systems: Filter design and application, stability analysis, control theory
  - Electronics: Analog and digital circuit design, computer architecture, mobile robotics.

## Experience

- January 2014-present, Fall 2011-Summer 2012: Research Assistant, C4I Center at George Mason University:
  - Developing maps using ArcGIS and Python predicting lost person behavior for use in wilderness search and rescue scenarios by fitting distribution parameters to case data. Cross-validated two different distributions to compare their relative effectiveness.
  - Presented: 2012 VASAR, WASAR, and NASAR Conferences and the 2014 Volgenau School of Engineering Undergraduate Research Celebration.
- Fall 2014-Summer 2015, Senior Design Project, George Mason University:
  - Developed path planning algorithms using probability maps and Matlab optimization packages to control the trajectory of an autonomous search and rescue unit. Also responsible for implementing vehicle navigation. Working in a team of four students.
- Summer 2013: Undergraduate Researcher, Undergraduate Research Scholars program at George Mason University:
  - Performed Uncertainty Quantification on parameters in the Soil –Carbon system for peat deposits using Monte Carlo and General Polynomial Chaos methods. Served as the primary researcher with a mentor in the Mathematics Department.
  - Presented: 2013 OSCAR Summer Research Celebration and the 2013 MARCUS Conference.
- Summer 2012-Summer 2013: Research assistant through URCM Program at the George Mason University Mathematics department:
  - Approximated historical temperatures using the Singular Value Decomposition on a training temperature dataset, tree ring growth indexes, and CO<sub>2</sub> measurements. Performed cross validation and created error bars on the resulting dataset. Served one of two primary researchers under a faculty and graduate student mentor.
  - Presented: 2012 JSUMS conference, 2013 Joint Math Meetings, and the 2013 George Mason Undergraduate Mathematics Conference.

## Honors and Awards

- Spring 2015-present: NSF Graduate Research Fellow
- Fall 2015-present: McDonnell International Scholars Academy- US Scholar
- Spring 2011-2015: George Mason University Scholarship
- Spring 2014: Outstanding Project Award, Volgenau School Undergraduate Research Celebration.
- Spring 2012: Schwartzstein Best Freshman Research Paper Award.