Paul Gustafson

paul.gustafson@gmail.com

Work Experience

Texas A&M University
2013 - Present

PhD Candidate, Department of Mathematics

- Proved conjecture on anyon suitability for topological quantum computation
- Created Haskell library for computing with quantum mapping class group representations
- Mentored undergraduates in conducting research projects
- Instructor for 60-student Calculus class

Knowledge Based Systems, Inc.
2008 - 2012

Programmer Analyst

- Secured $825,000 Phase II SBIR grant by co-developing a wireless sensor network cybersecurity simulator in Java and NetLogo
- Researched, designed, and implemented simulation features for various network topologies, routing protocols, attack types, power consumption profiles, and anomaly detection systems
- Designed and implemented exporter from a proprietary file format into UML (an open XML-based file format)

Programming Languages

Java, Haskell, Python, C, Agda, Coq, MATLAB, NetLogo

Education

Texas A&M University
2013 - Present

Doctor of Philosophy in Mathematics — May 2018 (Expected)

- Field of study: Mapping class group representations from TQFTs
- Advisor: Eric Rowell

Texas A&M University
2012-2013

Bachelor of Science in Mathematics — 2013

- Madhava Prize in Analysis

Princeton University
2007 - 2011

- Manfred Pyka Memorial Prize in Physics

Interests

Quantum computing, machine learning, type theory, weightlifting, piano, judo