Paul Gustafson
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Work Experience

Texas A&M University   2013 - Present
PhD Candidate, Department of Mathematics

Knowledge Based Systems, Inc.   2008 - 2012
Programmer Analyst

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

Princeton University   2007 - 2011

Research Interests

Topological quantum computation, 3-manifold and link invariants, topological quantum field theories, fusion categories, mapping class groups, quantum groups, type theory

Publications and Preprints

Paul Gustafson. "Finiteness for Mapping Class Group Representations from Twisted Dijkgraaf-Witten Theory", arXiv:1610.06069.

Ronald Fernandes; Biyan Li; Kalyan Vadakkeveedu; Ajay Verma; Paul Gustafson, et al. "Agent-based analysis of trustworthiness in wireless sensor networks", Proc. SPIE 8407, Multisensor, Multisource Information Fusion: Architectures, Algorithms, and Applications 2012, 84070W (May 1, 2012); doi:10.1117/12.920781.

Paul Gustafson; Nathan Savir; Ely Spears. "A Characterization of Refinable Rational Functions", American Journal of Undergraduate Research 5 (3): 11-20 (Nov. 11, 2006).

Conference Presentations

AMS Special Session on Tensor Categories: Bridging Algebra, Topology, and Physics, U. C. Riverside, CA, November 2017.

AMS Special Session on Invariants of Links and 3-Manifolds, U. North Texas, Denton, TX, September 2017.

AMS Special Session on Fusion Categories and Topological Phases of Matter, Salt Lake City, UT, April 2016.

Teaching Experience (Texas A&M University)

Mentor
REU on Mathematics of Topological Quantum Computation   Summer 2017

Instructor of Record
Mathematical Concepts – Calculus (M131)   Spring 2017

Teaching Assistant
Engineering Mathematics II (M152)   Fall 2015
Engineering Mathematics I (M151)   Spring 2016, Fall 2017

Grader
Algebraic Topology I (M643)   Fall 2016

Programming Languages

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