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, univalent dependent type theories

Publications and Preprints

P. Bruillard, P. Gustafson, J. Plavnik, E. C. Rowell, Categorical Dimension as a Quantum Statistic and Applications, submitted.

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

R. Fernandes, B. Li, K. Vadakkeveedu, A. Verma, P. 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.

P. Gustafson, N. Savir, E. Spears. A Characterization of Refinable Rational Functions, *Am. J. Undergrad. Res.* **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

Counselor
SMaRT High School Math Camp — Summer 2009, Summer 2010

Programming Languages

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