

James Bryan Graves

Amsterdam, The Netherlands | +31 6 11 75 19 66 | Bloomington, IN, USA | +1 (812) 974-3209 | gravjabr@iu.edu

- Quantum Information Science, Quantum Computer Science
- Algorithms, Complexity, Information Theory, Category Theory
- Data, Data Science
- Software/System Architecture, Functional (λ) programming, OOP, APIs, Operating Systems
- Research Assistant for National Science Foundation (NSF) funded quantum software stack development for trapped ion hardware
- 2+ years lecturing/teaching Bachelor's students

EDUCATION

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|--|---|
| Indiana University <i>Theoretical Computer Science PhD</i> <i>Quantum Information Science MS, GPA 4.0</i> <ul style="list-style-type: none">• Courses: Quantum Computation & Quantum Information, Advanced Functional Programming, Quantum Mechanics, Quantum Programming, Models in Cognitive Science, Research | Bloomington, IN, USA <i>Aug. 2026 – Present</i> <i>Aug. 2024 – May 2025</i> |
| Massachusetts Institute of Technology, MIT <i>Quantum Computing Fundamentals</i> | Cambridge, MA, USA, remote <i>Apr. 2024 – June 2024</i> |
| University of Applied Sciences Amsterdam, The Hague, Saxion, Fontys <i>Introduction Quantum Computing, Master's curriculum development & test run</i> | The Netherlands <i>Apr. 2024 – June 2024</i> |
| Purdue University <i>Bachelor of Science in Computer Science, BSCS, Music Theory Minor</i> | West Lafayette, IN, USA <i>Aug. 1996 – May 2000</i> |

RESEARCH & PUBLICATIONS

- Damir Cavar, James Bryan Graves, Shane Sparks, Koushik Reddy Parukola, **Hybrid Classical Quantum Embeddings for NLP and AI using Hamiltonians**. IEEE International Conference on Quantum Computing and Engineering (QCE25)
- Liyi Li, David Young, James Bryan Graves, Chandeeppa Dissanayake, Amr Sabry, **A Haskell Adiabatic DSL: Solving Classical Optimization Problems on Quantum Hardware**. The ACM SIGPLAN International Conference on Functional Programming (ICFP 2025)
- Damir Cavar, Koushik Reddy Parukola, James Bryan Graves, Shane Sparks, **Old Wine in New Bottles: Using Classical Word Embeddings in Quantum NLP Systems**. Quantum AI and NLP 2025
- James Bryan Graves, Goren Gordon, **Quantum Curiosity: Quantum Curious Feature Selection**. Quantum AI and NLP 2025

EXPERIENCE

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| Researcher <i>Indiana University, iu.edu</i> <ul style="list-style-type: none">• Quantum computer science & information science; quantum compilers, programming languages & implementation | Jan. 2025 – Present <i>Bloomington, IN, USA</i> |
| Researcher, Senior SDE <i>Hubzero, Purdue University, UCSD, San Diego Supercomputer Center (SDSC), hubzero.org</i> <ul style="list-style-type: none">• JVM microservices in Clojure (λ) & Java; data science & visualizations; published 2 academic papers, multi-conference speaker <i>More experience available on request, or @ jamesbryangraves.com ...</i> | Oct. 2015 – Oct. 2020 <i>San Diego, CA, remote</i> |
| SDE <i>IBM</i> <ul style="list-style-type: none">• Test evaluation platform for semiconductor wafer testing | May 2000 – Oct. 2000 <i>Burlington, VT</i> |

TECHNICAL SKILLS

Languages: Python, Haskell, C/C++, Javascript, Java, Clojure, .NET/C#, ...
Frameworks: Qiskit, PennyLane, Nvidia CUDA and CUDA-Q, Node.js, ...