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James Barry

LinkedIn: James-J-Barry
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Technical Skills

Languages: Python, Java, JavaScript, C, MATLAB, R, Shell (PBS/Slurm)
Frameworks/Tools: React, Node.js, Git, Ollama, Typescript, HTML/CSS, HPC, Apptainer, ChromaDB
Concepts: DST, OOP, Containerization, NLP, Prompt Engineering, Vector Embeddings, Parallel Computing, Quantum Machine Learning

Education

University of Maryland College Park, MD
B.S. in Computer Science, GPA: 3.96/4.0 *Aug 2024 – May 2027*

- **Coursework**: Data Structures and Algorithms, Object Oriented Programming I & II, Computer Systems, Operating Systems, Discrete Mathematics, Statistics, Undergraduate Research
- **Organizations**: First Year Innovation and Research (FIRE): Quantum Machine Learning Stream, Bitcamp Hackathon Organizer: Logistics & Hardware, Kappa Theta Pi Professional Technology Fraternity, Undergraduate Quantum Association

Professional Experience

Parsons Corporation & Army Research Lab DSRC Aberdeen Proving Ground, MD
Software Engineer & Data Scientist Intern *Jun 2025 – Aug 2025*

- Built and deployed a scalable evaluation system for semantic similarity algorithms on Army Test Incident Reports (TIRs), increasing evaluator accuracy and efficiency.
- Improved similarity search precision by over 280% using multi-stage LLM summarization pipelines with advanced prompt engineering and JSON parsing.
- Cut LLM processing time by 8× by parallelizing TIR analysis across 8-node HPC clusters using PBS batch jobs.
- Designed modular Python tooling with CLI interfaces, logs, and error handling to automate model evaluation and embedding generation.
- Created reproducible, documented tooling and GitLab repos supporting long-term code integration and research reusability.

First Year Innovation and Research Experience (FIRE) College Park, MD
Quantum Machine Learning Researcher *Jan 2025 – Present*

- Creating a strong foundational understanding of fundamental concepts in quantum computing and machine learning through hands-on research and collaboration with QLab Quantum research lab
- Executing quantum computing software, quantum hardware, and data analysis-centric projects using state-of-the-art tools and techniques in quantum computing and machine learning

Bitcamp College Park, MD
Logistics and Hardware Organizer *Oct 2024 – May 2025*

- Secured hardware equipment for hackers to facilitate their projects and ensured a seamless experience for all 1,400+ participants of the University of Maryland's premier hackathon
- Utilized CAD software and project organizational tools to design and build the community hack, a large collaborative art piece for the hackathon

Selected Technical Projects

- **High-Vis Grades for Gradescope**: A Chrome Extension addressing a key limitation in the Gradescope platform for the 40,000+ students at UMD who are required to use the platform for their classes. Programmed injection script using JavaScript that automatically calculates and displays course grades, using DOM manipulation, event listeners, grade calculation logic, and HTML injection scripting APIs.
- **HopHacks Hackathon Project: "RecipEZ"**: Created an online recipe database (MongoDB and Auth0) that stores recipes and their nutrition information for those with dietary restrictions. Programmed and designed a web app (Typescript, React, Node.js) that allows users to access, search for, and add recipes to the database.