JACK **P. DEMARINIS**

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**Summary**

Versatile computer engineer with a multidisciplinary background spanning software, hardware, and AI systems. Experienced in developing solutions that bridge embedded systems, robotics, and cutting-edge AI applications, including large language models and retrieval-augmented generation. Equally comfortable working independently or in cross-functional teams, with strong communication skills, adaptability, and a track record of delivering results under tight deadlines. Known for combining technical expertise with a collaborative, solutions-focused mindset to drive projects from concept to completion.

**Education**

**Master of Science: Electrical Engineering** **Expected in: 05/2026**

University of Rhode Island Kingston, RI

* Accelerated B.S./M.S. (ABM) Program Degree expected: May, 2026
* GPA: 3.90 / 4.00

**Bachelor of Science**: **Computer Engineering** **Graduated 05/2025**

University of Rhode Island Kingston, RI

* Degree obtained: May, 2025
* GPA: 3.90 / 4.00

**Technical Skills**

| * **Languages:** Python, C++, C, Bash, HTML/CSS, JavaScript, MIPS Assembly, LC-3
* **ML/AI:** PyTorch, Hugging Face Transformers & Datasets, LoRA/PEFT fine-tuning, OpenAI API, embeddings, vector search (FAISS), RAG pipelines, prompt engineering
* **Deployment:** Docker, Flask, REST APIs, GitHub Actions CI/CD, Linux systems, cloud AI services (GCP)
 | * **Data:** Pandas, NumPy, data preprocessing/cleaning, OCR (Tesseract), SQL basics
* **Design & Tools:** Fusion 360, AutoCAD, Matlab, LTSpice, Multisim, MathCad, VHDL, OpenMV IDE, Microsoft & Google productivity tools
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**Experience**

**Undergraduate Research Assistant** **05/2024 to Current**

**URI** **Kingston, RI**

* Engineered specialized chatbots by leveraging large language models and retrieval-augmented generation frameworks.
* Demonstrated capability to develop cohesive systems with Flask and modern front-end technologies.
* Deployed established APIs like OpenAI and Google to achieve high-quality project results.

**Computer Engineering Intern** **05/2024 to 01/2025**

**Electro Standards Laboratories** **Cranston, RI**

* Developed automation for internal systems via programming a Raspberry Pi with Python and C.
* Diagnosed and rectified sophisticated electrical challenges by scrutinizing and testing external code.
* Created comprehensive documentation to facilitate future work.
* Conducted rigorous testing to evaluate system functionality and identify opportunities for optimization.

**Software Engineering Intern** **06/2023 to 12/2023**

**IGT** **West Greenwich, RI**

* Resolved technical issues on Linux systems using command-line tools.
* Worked alongside colleagues both remotely and in-person to achieve shared objectives.
* Developed and executed Bash scripts, C, and C++ for API integration into devices.
* Implemented advanced Optical Character Recognition techniques to improve system performance and accuracy.

**Engineering Intern** **03/2022 to 08/2022**

**Sage Engineering and Contracting** **Westfield, MA**

* Assisted professional civil engineers in designing construction site plans and floor layouts using AutoCAD.
* Assembled and operated an ABB robotic arm to automate and optimize product creation.
* Supported engineers in developing and managing budgets for various projects.

**Generative AI Projects**

**Agentic RAG Chatbot**

* Built a multi-agent Retrieval-Augmented Generation (RAG) system integrating LLMs with specialized reasoning chains.
* Implemented embedding pipelines and vector search (**FAISS**) for context-grounded responses, reducing hallucinations by ~30%.
* Designed modular agent architecture using **Hugging Face Transformers** for orchestration and reasoning workflows.
* Packaged as a **Dockerized Flask API** with CI/CD (**GitHub Actions**) and **AWS deployment**.
* Developed custom prompt engineering strategies, routing logic, and tool-calling capabilities.

**AI Meeting Assistant**

* Engineered an end-to-end meeting intelligence platform with audio capture, transcription, summarization, and actionable insights.
* Leveraged **OpenAI Whisper** for transcription and **GPT-4** for multi-view summarization (action items, decisions, agendas).
* Created multi-agent processing pipelines with specialized prompt modules for meeting analytics and **Jira integration**.
* Built group-based knowledge organization with persistent context storage for personalized summaries.
* Automated distribution of structured notes, proposed increasing meeting follow-up efficiency by 40%.

**URI Senior Capstone Project**

**Robotic Assembly, Inspection & Test Automation – Senior Capstone Project**

* Developed an automated assembly workstation using robotics and visual inspection to enhance PCBA production efficiency.
* Designed control software to manage robots, conveyors, and sensors, generating production data and reports.
* Integrated multiple automated assembly subsystems to deliver a cost-effective, adaptable solution.
* Modeled physical systems in **Fusion 360** and 3D-printed components for precise integration.

**Personal Projects**

**Automated Water Mister – Personal Project**

* Created a BLE-enabled, sensor-driven environmental control system for habitat maintenance.
* Integrated custom circuits with **Arduino** for real-time monitoring of temperature, humidity, and water levels.
* Implemented I2C-based display for live system feedback.
* Designed and fabricated enclosure components in **Fusion 360** using 3D printing for a precise, modular fit.

**Activities and Honors**

* Achieved high honors and was on the Deans list every Semester at URI
* Received the Raymond M. Wright FastTrack Scholarship for the 2025-2026 academic year.
* Joined the URI wrestling team
* Accepted into the Accelerated Masters/Bachelors (ABM) program at the University of Rhode Island