Jack P. DeMarinis

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Education

University of Rhode Island, Kingston, RI — Expected May 2026
M.S. Electrical Engineering (Accelerated B.S./M.S. Program)
GPA: 4.00 / 4.00

University of Rhode Island, Kingston, RI — May 2025
B.S. Computer Engineering
Minor: Mathematics
GPA: 3.90 / 4.00

Technical Skills

GenAI / LLM: OpenAI API, Gemini API, LangChain, agentic architectures, MCP servers, retrieval-augmented generation (RAG), embeddings, prompt engineering, local small language models

Languages: Python, C++, C, Bash, JavaScript, HTML/CSS, MIPS Assembly, LC-3

Backend / Systems: Linux, Docker, Google Cloud Console (GCP)

ML / AI: PyTorch, Hugging Face Transformers and Datasets

Tools & Design: Visual Studio Code, Unity, Fusion 360, AutoCAD, MATLAB, Multisim, Mathcad, VHDL, OpenMV IDE, Git/Github, ROS / ROS2

Experience

Graduate Research Assistant — Sep 2025 – Present
University of Rhode Island, Kingston, RI
- Designed agentic, multi-step decision pipelines with tool calling and structured outputs to improve reliability across complex workflows.
- Built reusable MCP-style tool interfaces connecting LLMs to external services and internal utilities.
- Implemented simulation environments for swarm robotics in 2D, 3D, and VR using Pygame and Unity and latency-sensitive behaviors.
- Developed reproducible Linux and Docker workflows to support consistent builds and deployments across machines.
- Implemented and maintained a PostgreSQL database to support reliable data storage and fast query access.

Undergraduate Research Assistant — May 2024 – Aug 2025
University of Rhode Island, Kingston, RI
- Built LLM features using RAG, improving factual grounding across evaluation prompts.
- Integrated LLM capabilities using OpenAI's API in combination with GCP, connecting to Gmail and Google Calendar and implementing Google OAuth for secure sign-in.
- Developed and shipped backend services supporting AI workflows handling hundreds of requests per day.
- Created evaluation scripts to compare model and prompt variants using consistent test sets and measurable latency, cost, and output-quality criteria.

Computer Engineering Intern — May 2024 – Jan 2025
Electro Standards Laboratories, Cranston, RI
- Developed Python and C software on embedded Linux platforms, improving system reliability through repeatable test routines.
- Diagnosed and resolved electrical and software issues using structured debugging, instrumentation, and logging.
- Produced clear technical documentation to improve maintainability and team handoff.

Software Engineering Intern Jun 2023 – Dec 2023
IGT, West Greenwich, RI
- Resolved Linux system issues using low-level command-line debugging and root-cause analysis.
- Developed Bash, C, and C++ code for device-level integrations and internal tooling.
- Implemented OCR pipelines and validation checks to improve system accuracy and robustness.

Selected Projects

AI Meeting Assistant
- Shipped a production full-stack app and deployment workflow on Railway with a PostgreSQL-backed data model for durable meeting artifacts.
- Designed an LLM workflow with schema-first JSON outputs + validation to standardize summaries and action items for downstream integrations.
- Built reliability into the pipeline (retries, idempotent writes, explicit failure states) to prevent partial processing and inconsistent data.
- Created reusable prompts/templates and documentation to make the workflow repeatable for new users and future features.

Senior Capstone: Robotic Assembly & Inspection
- Built a modular automation workcell for through-hole PCBA assembly and inspection.
- Designed end effectors, fixtures, and feeder hardware in CAD; iterated via rapid prototyping.
- Integrated OpenMV vision for pose/orientation detection and UART/serial signaling to control code.
- Wrote documentation and handoff notes (design decisions, layout, troubleshooting).
- Presented the final system to a large audience, covering results and design tradeoffs.

Activities & Honors

Dean's List (every semester)
Raymond M. Wright FastTrack Scholarship (2025–2026)
URI Wrestling Team
Accelerated B.S./M.S. Program Admit