Miguel Garcia

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EDUCATION

BS in Computer Engineering & Computational Math Minor, New Jersey Institute of Technology *Sept 2022 – May 2027*

Relevant Coursework: Computer Science 1 & 2 (C++), Computer Organization and Architecture, Applied Machine Learning, Calculus 3, Differential Equations, Linear Algebra, Computer Graphics, Discrete Analysis, Operating Systems

EXPERIENCE

Full Stack Software Development Co-op, Verizon - Basking Ridge, NJ Jan 2025 – June 2025

- Developed a modular multi-agent conversational system using layered NLP classification and domain-specific prompts to deliver context-aware, real-time responses.
- Designed and deployed a responsive React.js + Vite frontend with progressive rendering, synchronized text-to-speech, and integrated image search for multimodal interaction.
- Built a RESTful Node.js + Express backend with MongoDB for persistent conversation storage, session management, and dynamic content delivery.
- Integrated external services, including Google Custom Search and ElevenLabs/Web Speech, to enrich engagement and support seamless voice-driven interaction.

Global Network & Technology Performance Intern, Verizon - Hempstead, NY June 2024 – Aug 2024

- Streamlined Excel-based processes and internal data tools to support network planning and data accuracy for Fios systems.
- Collaborated directly with Verizon Engineers to ensure data integrity and system performance.
- Developed workflows resulting in the update of over 1,350+ addresses and 2,000+ Build Drivers for 2024.

Data Entry Intern, Hispanics Inspiring Students' Performance and Achievement - Remote June 2023 – July 2023

- Optimized workflows to improve information management using Salesforce.
- Organized 10 years of Excel data, updating records for 60+ companies.
- Streamlined data systems to support faster access and analysis.

PROJECTS

RayTracer in C++ | C++, Custom-built math/vector libraries

- Building a ray tracer in C++ that simulates realistic lighting effects including shadows, reflections, and indirect illumination.
- Applying vector mathematics, and operator overloading to design ray-object intersection logic and recursive light transport.
- Optimizing performance using spatial partitioning techniques and modular class structures for extensibility and maintainability.

3D Rube Goldberg Machine in Unreal Engine | Unreal Engine 5, C++

- Designing an interactive 3D Rube Goldberg machine in Unreal Engine as part of a hands-on externship challenge.
- Focused on game design, physics-based mechanics, and creative storytelling to build engaging chain-reaction sequences.
- Iterating on level design using Blueprint and C++, gaining hands-on experience with AAA development tools and workflows.

Real-Time Obstacle Avoidance System | Python Scripting, Jetson Nano, Sockets, Computer Vision

- Architected a real-time obstacle avoidance system leveraging Jetson Nano's object classification model.
- Integrated a Pygame-based simulation with a custom socket server-client architecture for dynamic interaction.
- Utilized live prediction data to dynamically adjust paths and enhance real-time obstacle avoidance capabilities.

LEADERSHIP

External VP Committee Officer, Society of Hispanic Professional Engineers - Newark, NJ *Sept 2024 – Dec 2024*

- Assisted the NJIT External Vice President in developing and maintaining relationships with sponsors and corporate partners.
- Coordinated a partnership with Microsoft HOLA to deliver a professional development session for our SHPE chapter.

NJ Governor's Fellow, Center for Hispanic Policy, Research and Development**-** Remote *June 2023 – July 2023*

- Led an 8-member team in an 8-week CHPRD NJ Fellows Project, developing HISPA's strategic plan for political outreach.
- Volunteered as a role model for HISPA, speaking in underrepresented communities to inspire students.

TECHNICAL SKILLS

Languages & Libraries: Python, C/C++, MATLAB, JavaScript, HTML/CSS, Bash, React.js, Node.js, PyTorch, OpenCV, NumPy
Tools & Platforms: Git, Docker, Jira, Ubuntu, Postman, Salesforce, Unreal Engine 5, Blueprint, Jetson Nano, MongoDB
Systems & Concepts: RESTful APIs, Computer Vision, Object Detection (DetectNet), NLP