Miguel Garcia

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EDUCATION

New Jersey Institute of Technology — Newark, NJ
B.S. in Computer Engineering, Minor in Computational Mathematics — Expected May 2027

- Relevant Coursework: Data Structures & Algorithms, Operating Systems, Machine Learning, Computer Organization & Architecture, Linear Algebra, Differential Equations, Computer Graphics
- Affiliations: SHPE, CodePath, EOP, ALPFA, ColorStack, HISPA Role Model

EXPERIENCE

Full Stack Software Development Co-op — Verizon — Basking Ridge, NJ *Jan 2025 – Jun 2025*
- Engineered a modular multi-agent conversational system using layered NLP classification and domain-specific prompts, improving accuracy and enabling faster prototyping.
- Architected and deployed a responsive React.js + Vite frontend with progressive rendering and multimodal interaction, reducing load times and boosting engagement.
- Built a scalable RESTful Node.js + Express backend with MongoDB, improving session reliability and query performance.
- Integrated Google Custom Search and ElevenLabs/Web Speech APIs to enhance multimodal experiences.

Global Network & Technology Performance Intern — Verizon — Hempstead, NY *Jun 2024 – Aug 2024*
- Automated Excel processes and internal data tools, improving accuracy and reducing manual workload.
- Enhanced data validation workflows, reducing system errors and boosting reliability.
- Developed workflows to update 1,350+ addresses and 2,000+ Build Drivers for 2024.

Data Entry Intern — HISPA — Remote *Jun 2023 – Jul 2023*
- Redesigned Salesforce workflows to speed up data entry and retrieval.
- Consolidated 10 years of Excel data for 60+ companies, improving reporting accuracy.

PROJECTS

Ray Tracing AI Tutor – Interactive Educational Platform *React, WebGPU, PyTorch*
- Developing a WebGPU ray tracing engine with real-time visualizations and interactive parameter controls.
- Building a PyTorch LoRA fine-tuned model on 5,000+ ray tracing Q&A pairs for an educational AI assistant.
- Integrating AI-powered tutoring with real-time visual demonstrations.

3D Rube Goldberg Machine *Unreal Engine 5, C++*
- Designing a physics-based interactive Rube Goldberg machine for a creative externship challenge.
- Implemented 15+ mechanisms with Blueprint and C++, focusing on dynamic interactions and optimization.

Real-Time Obstacle Avoidance System *Python, Jetson Nano, Computer Vision*
- Built a real-time obstacle avoidance system with Jetson Nano and object classification models.
- Designed a Pygame-based simulation with custom socket architecture for dynamic visualization.
- Implemented adaptive path planning, improving success rates and reducing collisions.

LEADERSHIP

External VP Committee Officer — SHPE, NJIT Chapter — Newark, NJ *Sep 2024 – Dec 2024*
- Built corporate sponsor relationships, increasing funding and opportunities for chapter members.
- Coordinated a Microsoft HOLA partnership to host professional development sessions.

NJ Governor's Fellow — CHPRD — Remote *Jun 2023 – Jul 2023*
- Led an 8-member team to develop HISPA's political outreach strategy.
- Delivered motivational talks to 300+ students in underserved communities as a HISPA role model.

TECHNICAL SKILLS

Programming & Scripting: Python, C/C++, JavaScript, TypeScript
Frameworks & Libraries: React.js, Node.js, Express.js, PyTorch, Vite
Web & Systems: RESTful APIs, WebGPU, WebSockets, MongoDB, Git/GitHub
Graphics & Simulation Development: Unreal Engine 5 (Blueprint + C++), Ray Tracing, Computer Vision, Pygame
Tools & Platforms: Docker, Linux, Jetson Nano, Salesforce, Excel, Web Speech APIs