

Nathaniel Joseph

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EDUCATION

University of Miami, Coral Gables, Florida **May 2025**
Bachelor of Science, **Computer Engineering & Computer Science**, Minor in Communication **GPA: 3.22**
Relevant Coursework: Artificial Intelligence, Augmented Reality, Computer Org and Design, Database Design, Electronics, Neural Networks, Operating Systems, Processors, Quantum Computing, Software Arch and Design, Systems Programming

SKILLS

Languages: C++, Python, C, C#, Assembly, VHDL, JavaScript, Bash, Java, HTML/CSS, SQL (Postgres)
Frameworks / Technologies: Apple ARKit, AWS, DE1-SoC, ESRI, Git, Google ARCore, Google AI Studio, iOS, Jira, Jupyter Notebook, Keras, Linux, ModelSim, PyTorch, Quartus Prime, scikit-learn, Svelte, TensorFlow, Unity, UNIX, XCode

RELEVANT EXPERIENCE

University of Miami, Coral Gables, Florida **April 2022 – Present**
Full-stack Software Engineer, Frost Institute for Data Science and Computing
XR Software Engineer, IDSC VESL & Information Technology Innovate Team

- Designed, developed, tested, and deployed spatial applications using Magic Leap headsets in an Agile workflow
- Lead developer and designer of a mobile AR app that uses YOLOv8 computer vision technology to scan food and return its macronutrient data concerning portion size. Uses a self-trained database of over 120 thousand food images with hundreds of food options that are scannable and accurate, allowing for user input correction
- Applied system design principles to model a scalable, reliable, and performative system for an app using modern frameworks

The Singular Factory, Miami, Florida **May 2022 – August 2022**
Software Engineer Intern, X Reality Factory

- Utilized ArcGIS software to build an app with real-world raised-relief (3D) mapping capability for military and corporate use
- Efficiently worked with textures, tiles, and the GPU to understand and take advantage of the inner workings of graphics, how map rendering works, and how/where data flows to/from the cache in map tiling software
- Manipulated data in cache to overhaul existing obsolete map processing system on app for efficient use on spatial devices

PROJECTS

Calorie Checker AR | C#, JavaScript, Unity, ARCore, Git, OpenLabeling, YOLOv8, PostgreSQL, Svelte **June 2022 – Present**
An innovative image-analysis application that gives users the macronutrient and caloric information of food by scanning them with their phone camera in real-time

MARL Predator and Prey | Python, Keras, TensorFlow, NumPy, Pygame **December 2023**
Using multi-agent reinforcement learning to optimize a predator(s) and prey game by changing parameters, neural network design, and algorithms

Vehicle Positioning | Python, PyTorch, scikit-learn, Pandas, NumPy **November 2023**
Modeling and comparing ML and ANN-based approaches for vehicle positioning and line-of-sight signal classification using channel state information

LICENSES AND CERTIFICATIONS

Generative AI learning path *Google Cloud Skills Boost* **June 2023**
Unity Junior Programmer/Essentials *Unity* **May 2022**

EXTRACURRICULAR ACTIVITY

University of Miami XR Garage | Google Developer Students Club | BJJ Club | Pi Kappa Phi Fraternity, Alpha Chi Chapter

LEADERSHIP AND PROFESSIONAL DEVELOPMENT

Kappa Theta Pi Technology Fraternity, Sigma Chapter, Coral Gables, Florida **October 2023 – Present**
Vice President of Technical Development

- Initiated and led mentorship for junior members, providing guidance in technical skills, career development, and networking
- Oversaw the development and maintenance of the fraternity's technical infrastructure, including website, member databases, and communication tools

National Society of Black Engineers, Coral Gables, Florida **August 2022 – Present**
Chapter Senator, Presidential Candidate

- Developed and implemented initiatives to enhance diversity and inclusion within the engineering community, organizing workshops, panel discussions, and networking events to foster an inclusive environment for underrepresented students
- Organized "Friendsgiving" campus-wide collaborative event that fed holiday dinner over 167 students on campus