

DANIEL A. LOPEZ

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ACADEMICS

B.S. Computer Science and Mathematics

Aug 2019 - May 2023

University of Maryland, College Park, GPA: 3.7/4.0

Relevant Coursework: XR, Graphics, Vision, Data Structures, UX/UI, Algorithms, Linear Algebra, Real Analysis, Object Oriented Programming, Machine Learning, Data Science, Database Design, Compilers, Networking, HCI

Computer Science Teaching Assistant: Advanced Data Structures (CMSC420), 2022

Society of Hispanic Professional Engineers (SHPE) - UMD: President, 2021 - 2022

SKILLS

Languages Java, C, C++, C#, Python, JavaScript, HTML, SQL, Ruby, OCaml, Rust, MATLAB

Software Unity, Unreal, Git, PyTorch, Keras/Tensorflow, Docker, Blender, OpenCV, React, Snowflake

PROFESSIONAL EXPERIENCE

Google - Software Engineering Intern, *Kirkland, WA*

Jun 2023 - Sept 2023

- Implemented and tested back-end features for Google Cloud Platform's Meet application, developing a Timer service API.
- Leveraged internal Java async libraries, injection frameworks, and databases for handling RPC request operations.

Salesforce - Tableau Software Engineer Intern, *Seattle, WA*

May 2022 - Aug 2022

- Developed a containerized python application to facilitate interaction with an internal agile development tool from Slack.
- Enhanced app with Okta authentication, writing data to a Snowflake database, and by deploying on an AWS cloud service.

Booz Allen Hamilton - Cyber Intern, *Annapolis Junction, MD*

Jun 2021 - Aug 2021

- Trained PyTorch-based machine learning models to identify image attributes for countering adversarial artificial intelligence.
- Integrated optical character recognition software into vision models using OpenCV for improved data analysis capabilities.

Textron Systems - Software Engineering Intern, *Hunt Valley, MD*

Jan 2021 - May 2021

- Developed and tested C++ Windows console application employing multi-threading and socket engineering to simulate dynamic distributed algorithms for IP address allocation in a mobile ad hoc network with interconnected VM nodes.

RESEARCH

BCIPRO: Developing a Brain-Computer Interface for a 3D-printed upper-arm Prosthetic

UMD Gemstone Honors Researcher

May 2020 - May 2023

- Developed a 3D simulation environment in Unity with realistic physics-based interactions for an operational upper-arm and hand prosthetic to be used in rehabilitation.
- Created a multimodal, customizable, and accessible VR interaction system for the Meta/Oculus Quest 2 and HTC Vive Pro 2 using SteamVR, OpenVR, and Unity XR Interaction Toolkit, integrating with our brain-computer interface.
- Collaborated as part of an interdisciplinary team of undergraduate students to test and train existing neural networks, processing acquired EEG signals from OpenBCI headset into mechanical operations for a 3D-printed prosthetic.

Rendering Large Point Cloud Data for Virtual Reality in Unity using LOD Techniques

NASA/UMD Undergraduate Student Researcher

Oct 2022 - May 2023

- Explored point cloud rendering methods, including octree structures for level-of-detail (LOD) reduction, frustrum and occlusion culling, and point decimation. Optimized open-source renderers to develop a system capable of displaying large point cloud data (100 million points) in Unity while ensuring real-time performance (60 fps) for VR display.

Decluttering the Stars: A Study in AR Space Interface Minimalism

NASA SUITS (Spacesuit User Interface Technologies for Students) Challenge 2023 Finalist

Sep 2022 - May 2023

- Member of the UMD team that proposed and designed a comprehensive augmented reality UX/UI for the Microsoft HoloLens 2, intended for use by Artemis astronauts during a simulated lunar test mission at NASA Johnson Space Center.