

ETHAN VILLALOVOZ

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Education

Georgia Institute of Technology, College of Computing

Jan 2026 - Dec 2027

Master of Science in Computer Science — Computational Perception and Robotics, GPA: 4.0/4.0

Atlanta, GA

- Relevant Coursework: Robotics: AI Techniques, Computer Animation

Washington State University, Honors College

Aug 2021 - May 2025

Bachelor of Science in Computer Science — Minor in Mathematics, GPA: 3.94/4.0

Pullman, WA

- Senior Design Project: [Retrieval-Augmented Generation \(RAG\)](#) App Using Knowledge Graph and Vector Search
- Relevant Coursework: Artificial Intelligence, Machine Learning, Object-Oriented Programming, Probability & Statistics, Data Mining, Design & Analysis Algorithms, Optimization, Software Engineering, Data Structures, Linear Algebra

Technical Skills

Languages: Python, C/C++, SQL, JavaScript, TypeScript, HTML/CSS, C#, MATLAB, R, Haskell, Swift

Developer Tools: Git, GitHub, GitHub Actions, Docker, Bash, Conda, AWS, Postman, Jupyter, MLflow, DVC, MySQL

Libraries/Frameworks: React, Next.js, FastAPI, PyTorch, Pandas, LangChain, Hugging Face Transformers, OpenCV

Work Experience

Microsoft

May 2026 - Jul 2026

Incoming Software Engineer Intern

Redmond, WA

- Commerce and Ecosystems

Carnegie Mellon University

Jun 2024 - Aug 2024

Robotics Institute Summer Scholar

Pittsburgh, PA

- Developed a novel hierarchical **reward learning framework** using **Bayesian inference** to align robotic actions with human preferences from iterative **state corrections**, significantly enhancing robot adaptability
- Implemented a **proactive clarification dialogue** system that improved task accuracy by **30%** by resolving uncertainty through targeted human queries, reducing errors and advancing interactive human-robot collaboration
- Engineered a modular, extensible **Python**-based simulation environment using **Markov Decision Processes (MDP)**, supporting robust evaluation and iterative development of learning algorithms in simulated robotics tasks

Google

May 2023 - Aug 2023

Software Engineering Intern (STEP)

Sunnyvale, CA

- Developed and deployed **5 C++ and SQL**-based analytics jobs for internal database queue metrics, significantly reducing operational costs and enabling data-driven decision-making in collaboration with engineering stakeholders
- Optimized data sampling strategies to scale job execution from **1%** to **100%** dataset coverage within **4 hours**, achieving a **66%** reduction in runtime and improving the scalability, accuracy, and efficiency of internal analytics workflows
- Built interactive, real-time dashboards using **HTML** and **SQL**-based queries, delivering actionable insights to internal teams across engineering and operations, and enabling faster decision-making through intuitive visualizations
- Implemented live-update statistical features on client dashboards with **HTML** and database-driven queries, enhancing stakeholder visibility into queue activity, reducing detection latency, and enabling more responsive system oversight

Oregon State University

June 2022 – Aug 2022

NSF REU Fellow

Corvallis, OR

- Designed geometric motion primitives for multi-robot expressive behaviors by integrating techniques from the performing arts, enhancing robot character, emotional expressivity, and perceived intelligence in human-robot interaction settings
- Engineered a modular **Python** script to compute final geometric formation coordinates from user-defined inputs, enabling seamless, real-time deployment of expressive motion sequences on Pioneer 3DX robots used in HRI studies
- Developed a user-friendly **Tkinter GUI** to simplify interaction with the geometry scripting tool, increasing accessibility and enabling efficient setup and execution of complex robot formations without requiring command-line knowledge

Projects

SentiSync – Real-Time YouTube Sentiment Analysis

Tech Stack: Flask, React, MLflow, DVC, Docker, AWS

- Built a real-time sentiment analysis system with a Chrome Extension frontend and **Flask API** backend, enabling instant visualization of YouTube comment sentiment using a fine-tuned **LightGBM** model and **TF-IDF** features

CodePrep.AI – AI Coding Interview Prep

Tech Stack: React, FastAPI, Clerk, Hugging Face, SQLite

- Designed and deployed a full-stack platform for interactive coding interview prep that generates unique, difficulty-based challenges via **Meta-Llama-3-8B-Instruct**, with real-time feedback, quota tracking, and historical review