

ETHAN VILLALOVOZ

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Education

Georgia Institute of Technology, College of Computing Master of Science in Computer Science — Computational Perception and Robotics, GPA: 4.0/4.0 • Relevant Coursework: Robotics: AI Techniques, Computer Animation	Jan 2026 - Dec 2027 Atlanta, GA
Washington State University, Honors College Bachelor of Science in Computer Science — Minor in Mathematics, GPA: 3.94/4.0 • 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	Aug 2021 - May 2025 Pullman, WA

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 Incoming Software Engineer Intern • Commerce and Ecosystems	May 2026 - Jul 2026 Redmond, WA
Carnegie Mellon University Robotics Institute Summer Scholar • 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	Jun 2024 - Aug 2024 Pittsburgh, PA
• 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 Software Engineering Intern (STEP) • 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	May 2023 - Aug 2023 Sunnyvale, CA
• 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 NSF REU Fellow • 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	June 2022 – Aug 2022 Corvallis, OR
• 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 • 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	Tech Stack: Flask, React, MLflow, DVC, Docker, AWS
CodePrep.AI – AI Coding Interview Prep • 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	Tech Stack: React, FastAPI, Clerk, Hugging Face, SQLite