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

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

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 **Summer 2026**
Incoming Software Engineer Intern Redmond, WA

Meta & Major League Hacking **Jun 2025 - Sep 2025**
Production Engineering Fellow Remote

- Deployed a full-stack **Flask portfolio app** with **Docker** on a **DigitalOcean VPS**, enabling persistent deployment and ensuring **100% uptime after reboot** through automated systemd services for stable production reliability
- Integrated a **MySQL database** and configured **Nginx reverse proxy with HTTPS and rate limiting**, strengthening backend scalability, improving security, and enhancing reliability for secure production environments
- Automated deployments with a **CI/CD pipeline** using **GitHub Actions** and **Bash**, cutting manual deployment time by **80%** and ensuring every push was tested, containerized, and deployed for efficient production workflows
- Implemented a comprehensive **monitoring stack** with **Prometheus**, **Grafana**, and **Linux CLI tools**, uncovering bottlenecks under load and optimizing resource allocation for consistent scalability and system performance

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**
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