Ethan Villalovoz

ethan.villalovoz@wsu.edu | ethanvillalovoz.github.io

RESEARCH INTERESTS

Developing autonomous systems through advanced robotics, machine learning, and AI, with particular emphasis on perception, planning, control, and natural language processing.

EDUCATION

Washington State University, Honors College, Pullman, Washington USA 2021 - 2025
B.S. in Computer Science, Minor in Mathematics GPA: 3.96/4.0

AWARDS

Auvil Undergraduate Research Fellowship, Washington State University 2024
Awarded to support research, scholarship, and creative activity for undergraduate students in all majors, all campuses, and at all levels of undergraduate education.

Distinguished Leader Award, Washington State University 2024
Recognizes individuals who demonstrate exceptional leadership and service to the WSU Pullman and surrounding community, as well as those who support leadership development students.

CS Research Mentorship Program Scholar, Google 2023
Accepted to a three-month program that matches students with Google mentors and peers to support their pursuit of computer science research pathways.

Generation Google Scholarship 2023
Awarded based on the strength of each candidate's commitment to diversity, equity, and inclusion, demonstrated leadership, and academic performance.

MARC (Maximizing Access to Research Careers) Scholar, Washington State University 2023
NIH-funded opportunity for undergraduate students from underrepresented backgrounds to embark on a two-year scientific research program, leadership development, and graduate-school preparation.

Early Career Award Research Proposal, Washington State University SURCA 2023
This level is for first-year students and sophomores who receive excellent scores from the judges.

Hispanic Scholarship Fund Scholar 2022, 2023
Empowers students and parents with the knowledge and resources to successfully complete a higher education.

ESTEEMED MIRA Scholar, Washington State University 2021
NIH-funded unique opportunity for undergraduate students from underrepresented groups planning to major in biomedical science and engineering fields.

Society of American Military Engineers (SAME) Scholarship 2021, 2022, 2023, 2024
Encourage and support talented students in their pursuit of careers in engineering and the physical sciences.

ACADEMIC EXPERIENCE

Carnegie Mellon University, Pittsburgh, Pennsylvania USA

Robotics Institute Summer Scholars Jun 2024 – Aug 2024
Investigating reinforcement learning from human feedback and real-time corrections to align autonomous systems with human preferences and values.

Washington State University, Pullman, Washington USA

Undergraduate Research Assistant Aug 2023 – Present
Analyzing and mitigating security vulnerabilities in code generated by large language models (LLMs) to enhance system integrity and cybersecurity.

Undergraduate Research Assistant   Aug 2022 – May 2023

Explored the potential of ecological momentary assessments (EMA) through in-depth study of smartwatch data, laying the foundation for real-time prediction of emotional and psychological states.

Undergraduate Research Assistant   Feb 2022 – Aug 2022

Utilized HTML/CSS to develop a dynamic website for the lab group, facilitating effective communication and information sharing among researchers.

Undergraduate Research Assistant   Aug 2021 – Feb 2022

Worked with graduate researchers to learn various instrumentation techniques, including absorption and luminescence spectroscopy.

Oregon State University, Corvallis, Oregon USA

Research Experience for Undergraduates   Jun 2022 – Aug 2022

Developed geometric features for multi-robot expressive motion, integrating performing arts techniques to enhance robot character and intelligence.

PUBLICATIONS

[1] Alexandra Bacula, **Ethan Villalovoz**, Deanna Flynn, Ankur Mehta, Heather Knight. *Social Triangles and Aggressive Lines: Multi-Robot Formations Impact Navigation and Approach*. In Proceedings of the 2023 IEEE/RSJ International Conference on Intelligent Robots and Systems (IROS 2023).

CONFERENCE PRESENTATIONS

[2] **Villalovoz, Ethan T.**; Cook, Diane J. 2023. *Innovation On Your Wrist: Developing Ambient Smartwatches for Automated Cognitive Health*. Pacific Northwest LSAMP Conference, Portland, OR. Funded by the National Institute of Biomedical Imaging and Bioengineering of the NIH (R25EB027606).

[1] **Villalovoz, Ethan**; Bacula, Alexandra. 2022. *Scary Triangles and Friendly Arcs: Developing Geometric Features for Multi-Robot Expressive Motion*. Research Experiences for Undergraduates: Robots in the Real World, Corvallis, OR.

PROFESSIONAL EXPERIENCE

Break Through Tech, New York, New York USA

AI Fellow (Remote)   May 2024 – Present

Earned an eCornell Machine Learning Foundations certificate by deploying ML models for business solutions, applied these skills in real-world projects with industry experts, and advanced my career through mentorship and hands-on simulations.

Google, Sunnyvale, California USA

STEP Intern   May 2023 – Aug 2023

Developed and optimized 5 statistics collection jobs using C++ and SQL, reducing cost expenditures and runtime by 66%, enabled incremental job sampling scaling from 1% to 100% within 4 hours, and created dynamic graphs and real-time statistics features for client dashboards.

TECHNICAL SKILLS

Programming Languages: C/C++, Python, HTML/CSS, Haskell, MATLAB, LaTeX, C#, SQL, R

Developer Tools: VS Code, VS Community, Xcode, CLion, PyCharm, RStudio, Google Colab

Technologies/Frameworks: Robot Operating System, Pandas, NumPy, PyTorch, Scikit-learn, TensorFlow, Matplotlib, Seaborn

TEACHING

MATH 497: Instructional Practicum

Math Learning Center Tutor, Washington State University   Fall 2023

CPT_S 355: Programming Language Design
Undergraduate Teaching Assistant, Washington State University   Fall 2023

CPT_S 121: Program Design and Development C/C++
Undergraduate Teaching Assistant, Washington State University   Fall 2022

OUTREACH   **CMU RISS RoboLaunch**, Website Coordinator   2024 - Present
An initiative to explore the world of robotics through a series of talks and interactive workshops.
Responsible for updating the website to ensure accessibility and provide up-to-date information.

WSU VCEA, Voiland College Ambassador   2022 – Present
Represented and connected Voiland College with industry, alumni, and prospective students, sharing
unique experiences and perspectives to promote the college's mission and transformative impact.

WSU Responsibility Opportunity Advocacy Respect (ROAR), Peer Ally   2021 – 2023
Collaborated with ROAR students by providing support in attending classes, facilitating social
integration, participating in university events, and fostering inclusive experiences.