

# Miles Stanley

[milesdstanley@gmail.com](mailto:milesdstanley@gmail.com) | [milesstanley.github.io](https://milesstanley.github.io) | [linkedin.com/in/miles-stanley](https://linkedin.com/in/miles-stanley)

## EDUCATION

### University of Washington

*Bachelor of Science in Computer Science (GPA: 3.95/4.0)*

Seattle, WA

*Expected June 2026*

## AWARDS & HONORS

**Award for Excellence as a Supporter of First-Year Students**, *University of Washington* (\$500)

Dec. 2025

**REU Conference Travel Grant**, *Rochester Institute of Technology* (\$2,980)

Nov. 2025

**Annual Dean's List**, *University of Washington*

2023 – 2025

## RESEARCH INTERESTS

Robust Machine Learning, Explainable AI, Natural Language Processing, AI for Healthcare and Social Good.

## RESEARCH EXPERIENCE

### Undergraduate Research Assistant

*UW School of Medicine, NEST Program*

Nov. 2024 – Present

*Seattle, WA*

- *Advisor: Prof. Rachel Umoren*
- Evaluated signal denoising techniques to improve neonatal heart rate measurement during ambulance transport.
- Developed multithreaded Python scripts using Tesseract OCR to automate data extraction from medical reports, achieving a 75% reduction in execution time.
- Developing an NLP system using LLMs (Llama 3.1) to evaluate medical simulation transcripts for automated scoring and feedback.

### REU Researcher

*Rochester Institute of Technology*

May 2025 – August 2025

*Rochester, NY*

- *Advisor: Prof. Ashiqur KhudaBukhsh*
- First author on a project investigating "vaccine buyer's remorse" in a large corpus of YouTube comments.
- Implemented a multi-stage hybrid pipeline to quantify nuanced, politically charged sentiment at scale.
- Created a novel benchmark dataset of 2,000 comments, annotated by a politically diverse panel to mitigate subjectivity and rater bias.
- Fine-tuned and evaluated multiple LLMs (e.g., Llama 3, Mixtral) to classify 600k+ comments based on narrative perspective and the presence of regret.

### Undergraduate Research Assistant

*University of Washington, Make4All Group*

Oct. 2024 – May 2025

*Seattle, WA*

- *Advisors: Prof. Jennifer Mankoff, Brianna Wimer (Ph.D. Student)*
- Collaborating on the development of generative AI tools to create accessible flowcharts.
- Performed rigorous quality assurance and error analysis on 200+ model-generated code outputs (Mermaid.js) to identify systematic model failures and guide improvements.

## PUBLICATIONS & PRESENTATIONS

**Stanley, M.\***, Datta, S., Kumar, A., & KhudaBukhsh, A. R. (2025). Investigating Vaccine Buyer's Remorse. *To appear in the Proceedings of the AAAI Conference on Artificial Intelligence (AAAI)*.

Wimer, B. L., **Stanley, M.\***, Ack, H., Haley, S., Metoyer, R. A., & Mankoff, J. (2025). AccessFlow: From Diagram Images to Structured Access. *Manuscript in preparation*.

**Investigating Vaccine Buyer's Remorse**. Oral presentation at the RIT Undergraduate Research Symposium, Rochester, NY. (July 2025)

**Improved Neonatal Heart Rate Measurement During Ambulance Transport**. Poster presented at the UW Undergraduate Research Symposium, Seattle, WA. (May 2025)

INDEPENDENT RESEARCH

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<b>Generative Rationale-Guided Training (GRGT)</b>	Sept. 2025 – Present
<i>CSE 493S: Advanced Machine Learning</i>	<i>Seattle, WA</i>
<ul style="list-style-type: none"><li>• Architected a novel teacher-student framework to instill robust reasoning in smaller models by leveraging LLM-generated rationales.</li><li>• Created a dual-objective loss (Cross-Entropy and KL Divergence) to reduce reliance on spurious correlations.</li><li>• Outperformed baseline accuracy by 10% (77% vs 70%) on out-of-distribution Twitter data and improved causal sufficiency by 21% (0.61 to 0.74).</li></ul>	

TEACHING & MENTORSHIP EXPERIENCE

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<b>First-Year Interest Group (FIG) Co-Leader</b>	Autumn 2025
<i>University of Washington</i>	<i>Seattle, WA</i>
<ul style="list-style-type: none"><li>• Co-led weekly seminar for 25 first-year students to ease their university transition and build a learning community.</li></ul>	
<b>Outreach Volunteer, Hour of Code</b>	Dec. 2024
<i>University of Washington, COM<sup>2</sup></i>	<i>Seattle, WA</i>
<ul style="list-style-type: none"><li>• Led two "Hour of Code" workshops on programming and computer vision for middle and high school students.</li><li>• Mentored students through hands-on learning challenges, including training a model to recognize gestures.</li></ul>	

TECHNICAL SKILLS

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**Languages:** Python, Java, JavaScript, TypeScript, C, Bash | **Tools:** Git, Docker, VS Code  
**AI/ML:** PyTorch, Hugging Face, Scikit-learn, Pandas, NumPy, Matplotlib  
**Spoken:** English (Native), French (Fluent)

RELEVANT COURSEWORK

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**CS & AI:** Advanced Machine Learning, Natural Language Processing, AI, Data Structures & Parallelism  
**Math & Stats:** Matrix Algebra, Intro to Probability & Statistics, Calculus I-III