

Alex Wilf

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EDUCATION

Carnegie Mellon University

Sep 2021 - Present

PhD Student in Language Technologies Institute, School of Computer Science

- Courses: Machine Learning, Advanced Topics in Multimodal Machine Learning, Natural Language Processing, Question Answering, Artificial Social Intelligence
- Cumulative GPA: 4.08 / 4.0

University of Michigan, Ann Arbor

B.S. in Computer Science, Phi Beta Kappa

Sep 2015 - Dec 2019

PUBLICATIONS

- **Alex Wilf**, Pranjal Aggarwal, Bryan Parno, Daniel Fried, Louis-Philippe Morency, Paul Pu Liang, Sean Welleck. “Propose, Solve, Verify: Self-Play Through Formal Verification”. **arXiv 2025**.
- Gyeongwon James Kim, **Alex Wilf**, Louis-Philippe Morency, Daniel Fried. “From Reproduction to Replication: Evaluating Research Agents with Progressive Code Masking”. **arXiv 2025**.
- Alex Tianyi Xu, **Alex Wilf**, Paul Pu Liang, and Alexander Obolenskiy, Daniel Fried, and Louis-Philippe Morency. “Comparative Knowledge Distillation”. **WACV 2025**.
- **Alex Wilf**, Sihyun Shawn Lee, Paul Pu Liang and Louis-Philippe Morency. “Think Twice: Perspective-Taking Improves Large Languages Models’ Theory-of-Mind Capabilities”. **ACL 2024**.
- Paul Pu Liang, Chun Kai Ling, Yun Cheng, Alexander Obolenskiy, Yudong Liu, Rohan Pandey, **Alex Wilf**, Louis-Philippe Morency, Russ Salakhutdinov. “Multimodal Learning Without Labeled Multimodal Data: Guarantees and Applications”. **ICLR 2024**.
- **Alex Wilf***, Syeda Akter* et al. "Difference-Masking: Choosing What to Mask in Continued Pretraining." **Findings of EMNLP (2023)**.
- **Alex Wilf***, Martin Q. Ma*, Paul Pu Liang, Amir Zadeh, and Louis-Philippe Morency. “Face-to-Face Contrastive Learning for Social Intelligence Question-Answering”. **Oral Presentation at FG 2023**.
- **Alex Wilf** and Emily Mower Provost. “Dynamic Layer Customization for Noise Robust Speech Emotion Recognition in Heterogeneous Condition Training.” 2021. **Oral Presentation at ACII 2021**.

EXPERIENCE

Research Scientist Intern

Meta, Reality Labs Research

May 2024 - Dec 2024

Redmond, WA

- Worked on a project to improve digital agent output reward models (ORM's)
- Through trajectory sampling & oracle test case labelling, we were able to finetune ORM's to improve from .38 to .87 F1 score, a **128.39%** relative improvement.
- We found that PRM's for digital agent tasks are much more challenging, and finetuning in this way does not significantly improve performance.
- We open source our framework for running experiments, which leverages massive CPU parallelization to amortize long-running emulation operations such as state resets, increasing GPU utilization and leading to a **10x reduction in experimental time**.

Graduate Research Assistant

MultiComp Lab, Carnegie Mellon University

Sep 2021 - Present
Pittsburgh, PA

- Researching multimodal artificial social intelligence with Professor Louis-Philippe Morency.
- Created a novel deep learning architecture using a multimodal graph neural network (FG '23).
- Developed a novel masking strategy for large multimodal foundation models during continued pretraining (EMNLP '23).
- Invented a method for distilling the knowledge in large vision “teacher” models to small, lightweight “student” models with access to few calls to the teacher (arxiv '23).

Research Assistant

Computational Human Artificial Intelligence Lab, University of Michigan

Jan 2020 - May 2021
Ann Arbor, MI

- Researched deep learning methods for deployable automatic speech emotion recognition with Professor Emily Mower Provost.
- Designed a novel task and approach for noise robust speech emotion recognition, showed significant improvements over baseline.

Software Engineering Intern

Uber

May 2018 - Aug 2018
San Francisco, CA

- Completed full stack project building search into Uber for Business dashboard and supporting database infrastructure.
- Organized and led conversations with three different teams to design an efficient data storage and retrieval solution.
- Implemented back end functionality using Go, front end functionality using React, Redux, Node/Javascript.

President

University of Michigan Men's Glee Club

May 2018 - May 2019
Ann Arbor, MI

- Managed \$500,000 budget, 12 person executive team, 95 person glee club and alumni relations with over 2,500 alumni.
- Raised over \$100,000 for international tour, increased profits from concerts, digitized recordings, created alumni database and web store with new merchandise.
- Increased community outreach by raising over 36,000 meals for charity and performing for inmates and hospital patients.

Service

Reviewer: ARR February 2024

Co-organizer: 2nd Workshop on Artificial Social Intelligence @ ICCV 2023

Co-organizer: 4th Workshop on Multimodal Artificial Intelligence @ NAACL 2022

TEACHING

Teaching Assistant, Carnegie Mellon University <i>11-777 Multimodal Machine Learning</i>	Sep 2022 - Dec 2022 Pittsburgh, PA
Teaching Assistant, University of Michigan <i>EECS 492: Introduction to Artificial Intelligence</i>	Sep 2019 - Dec 2019 Ann Arbor, MI

HONORS AND AWARDS

The Hugh G. Rumler Prize	2019
Phi Beta Kappa	2019
EECS Scholar	2018, 2019
Dewey, Ramsey, Llangollen Scholarships (Men's Glee Club)	2018
James B. Angell Scholar	2017, 2018
Barger Leadership Institute Capstone Award	2017
University Honors	2016-2019
Grand Prize (EECS 183 Showcase)	2016

TECHNICAL SKILLS

Programming Languages: Python, C++, Javascript, Go
Libraries and Tools: Tensorflow, PyTorch, NumPy, Git