Alyssa Unell

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EDUCATION

Stanford University | Stanford, CA
PhD Student in Computer Science
Massachusetts Institute of Technology (MIT) | Cambridge, MA
B.S. in Computation and Cognition; GPA: 5.0/5.0 *May 2023*

RESEARCH EXPERIENCE

Stanford University | Stanford, CA
Graduate Researcher *Sep 2023 – Present*
- Co-advised by Professor Sanmi Koyejo and Professor Nigam Shah, interested in trustworthy machine learning applications in healthcare, specifically from the lens of robustness, reliability, and evaluation methodologies

Microsoft Research -- Health Futures | Redmond, WA
Research Intern *June 2025 – Sep 2025*
- Worked with the Real-World Evidence Health Futures team to develop an agentic LLM approach to predict guideline-adherent cancer treatments with AUC of 0.804, leveraging calibration strategies for data-sparse settings.

MIT CSAIL – Golland Lab | Cambridge, MA
Undergraduate Researcher, Bayesian MRI Reconstruction *Aug 2022 – May 2023*
- Explored joint priors in the image and frequency space and their impact on score based generative models for MRI reconstruction

Excellence Research Internship Program | Lausanne, Switzerland *May 2022 – Aug 2022*
Research Intern
- Designed and implemented an algorithm to ensure secure data sharing for sensitive information in decentralized machine learning for an open-source platform

Intel – Architecture and Graphics Software Department | Hillsboro, OR *Jun 2021 - Aug 2021*
Machine Learning Intern
- Implemented a recommender system containing 200 million data points and profiled 100x delay of Intel's hardware-aware Pandas implementation

MIT Department of Brain and Cognitive Sciences – Sinha Lab | Cambridge, MA
Undergraduate Researcher, MIT Quest for Intelligence *Sep 2020 – May 2022*
- Worked on projects related to neural noise progression, facial recognition systems, and visuo-motor skill improvement

PUBLICATIONS

1. *CancerGUIDE: Cancer Guideline Understanding via Internal Disagreement Estimation*
   Alyssa Unell … Matthew Lungren, Hoifung Poon
   ML4H Proceedings (Presented at GenAI4Health@NeurIPS, 2025).
2. *MEDHELM: Medical Holistic Evaluation of Large Language Models*
   (α-β) Suhana Bedi*, Hejie Cui*, Miguel Fuentes*, **Alyssa Unell***… Percy Liang, Mike Pfeffer, Nigam Shah
   Nature Medicine, 2025
3. *TIMER: Temporal Instruction Modeling and Evaluation for Longitudinal Clinical Records*
   Hejie Cui*, **Alyssa Unell*,** Bowen Chen, Jason Alan Fries, Emily Alsentzer, Sanmi Koyejo, Nigam Shah
   npj Digital Medicine, 2025.
   (Presented at ICLR SynthData Workshop, 2025).
4. *Real-World Usage Patterns of Large Language Models in Healthcare*
   Alyssa Unell*, Mehr Kashyap*, Michael Pfeffer, Nigam Shah
5. *Why are Visually-Grounded Language Models Bad at Image Classification?*
   Yuhui Zhang, **Alyssa Unell**, Xiaohan Wang, Dhruba Ghosh, Yuchang Su, Ludwig Schmidt, Serena Yeung-Levy
   NeurIPS 2024
6. *μ-BENCH: Vision-Language Benchmark for Microscopy Understanding*
   Alejandro Lozano, Jeffrey Nirschl, James Burgess, Sanket Rajan Gupte, Yuhui Zhang, **Alyssa Unell**, Serena Yeung-Levy
   NeurIPS Datasets and Benchmarks Track 2024
7. *Feasibility of Automatically Detecting Race-Based Medicine by Large Language Models*
   Akshay Swaminathan, Sid Salvi, Philip Chung, Alison Callahan, Suhana Bedi, **Alyssa Unell**, Mehr Kashyap, Roxana Daneshjou, Nigam Shah, Dev Dash
   AAAI 2024 Spring Symposium on Clinical Foundation Models

8. *From Clear to Noise: Investigating Neural Noise Progression in Visual System Robustness*
   Hojin Jang, **Alyssa Unell**, Suayb Arslan, Walt Dixon, Michael Fux, Matt Groth, Joydeep Munshi, Pawan Sinha
   Vision Sciences Society Poster Session, 2024
9. *Transformation Tolerance of Machine-based Face Recognition Systems*
   Ashika Verma, Kyle Keane, **Alyssa Unell**, Anna Musser & Pawan Sinha
   ICLR Generalization Beyond Training Distribution in Brains and Machines Workshop, 2021
10. *Influence of Visual Feedback Persistence on Visuo-Motor Skill Improvement*
    Alyssa Unell, Zachary M. Eisenstat, Ainsley Braun, Abhinav Gandhi, Sharon Gilad-Gutnick, Shlomit Ben-Ami,Pawan Sinha
    Nature Scientific Reports, 2021

SKILLS & AWARDS

Skills: Python, PyTorch, JavaScript, TypeScript, Git, TensorFlow, Machine Learning, OpenCV, R, Linux, Pandas, Spanish
Awards: NSF Graduate Research Fellowship, Stanford Graduate Fellowship, MIT Brain and Cognitive Science Research Award, Undergraduate Academic Award, Glushko Prize for Outstanding Undergraduate Research in Cognitive Science, EPFL Excellence Scholarship, ThinkSwiss Research Scholarship