Aspen Hopkins

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Education

Massachusetts Institute of Technology / Cambridge MA
Ph.D. in Electrical Engineering and Computer Science
Advisor: Aleksander Madry

Masters of Science in Electrical Engineering and Computer Science
Advisor: Arvind Satyanarayan

Westminster College / Salt Lake City UT
B.S., Computer Science, Neuroscience (August 2013 - August 2017)

Research Experience

Massachusetts Institute of Technology / CSAIL
Madry Lab / Graduate Research Assistant September 2022 - Present
My current research explores robustness, interpretability, and fairness in machine learning systems.

Visualization Group / Graduate Research Assistant September 2018 – May 2022
My research focused on data visualization, interpretability in machine learning, and how we can effectively communicate fuzzy topics like uncertainty and ineffectiveness to a diverse audience.

Apple AI/ML / Seattle, WA
Machine Intelligence / Research Contractor December 2021 - January 2022

Machine Intelligence / Research Intern June 2020 - October 2020
Created tools and interventions for data collection and machine learning deployment.
Cross-collaborated with teams in AI/ML, Siri, Raise To Speak (RTS), and Health.

NASA Jet Propulsion Labs | Caltech | ArtCenter
Visualization Research Intern June 2019 – September 2019
Built an intuitive interface for uncovering mineral flow in drilled core, furnished to enable search of patterns, analysis of core sections, curation and annotation of found features, and an interactive creation of complex multi-channel/multi-mineral maps

University of Utah Scientific Computing and Imaging Institute
Visualization Design Lab / Research Assistant January 2017 – August 2018
Developed web-based visualization system incorporated in a layered framework of sensors, models, land-use information and citizens for understanding air quality in urban environments

Coordinated with hardware developers and outreach liaisons to determine best system design for both educational and research purposes

Great Salt Lake Institute
Research Assistant + Outreach Liaison August 2014 - December 2016
Created lab incubation and chemical measurement practices for observing microbialite activity

Designed and built prototype embedded system for the Natural History Museum of Utah (NHMU) that incorporated measurement and statistical analyses of microbialite activities

Westminster College Interdisciplinary Neuroscience Lab
Research Assistant August 2013 - May 2015
Assisted in research on EEG-based brain-computer interfaces that incorporated machine-learning algorithms to differentiate varying motor movements.

Teaching

Noise, Perception, & Learning in AI Art Applications / Instructor January 2022

AI, Decision Making & Society / Teaching Assistant Fall 2022

Data Crafting Workshop / Instructor January 2020

Other Work

Balance Homes / Chief of Staff & Principle Data Scientist May 2022 - September 2022

Pillar VC / Associate Investor September 2020 - June 2021

Community

MIT EECS Committee for Diversity, Equity & Inclusion (CDEI) / Graduate Student Member
December 2019 - Present

MIT Graduate Community Fellow/ GSC Orientation & Onboarding Programs Fellow
January 2019 - May 2019

Sisters Rise Up / Project Mentor
January 2016 - May 2016
Fostered learning community for female high school students and ran webinars on Java for AP CS exam

Promise South Salt Lake / STEM Coordinator
August 2014 - May 2015
Developed and oversaw curriculum, lesson plans, and assignments for STEM afterschool programs in underserved communities

Ran after school programs and communicated with parents, teachers, and administrators

AWE + SUM Camp/ Counselor + Activity Facilitator
July 2015, July 2016
Mentored female 8th grade students in STEM.

Publications + Awards + Activities

Li, K., Hopkins, A., Bau, D., Viégas, F., Pfister, H. & Wattenberg, M. **Emergent world representations: Exploring a sequence model trained on a synthetic task.** *Submitted to ICLR 2023.*

Hopkins, A., Holman, F., Zapella, L., Suau, X., & Moritz, D. **Designing Data: Proactive Data Collection and Iteration for Machine Learning**. *Submitted to CHI 2023.*

Hopkins, A., Lombeyda, S., & Mushkin, H. **Heterogeneous Uncertainty: The Impacts of Quantitative and Qualitative Uncertainty in Data Pipelines.** *Preprint.*

Hopkins, A. & Suresh, H. **Communicating Uncertainty in Machine Learning Systems**. *Information+ 2021.*

Hopkins, A. & Booth, S. **Machine Learning Practices Outside Big Tech: How Resource Constraints Hinder Responsible Development**. *AIES 2021.*

2020 Siebel Scholar.

Hopkins, A. & Vladis, N. **Data Crafting**. *VIS 2020.*

Hopkins, A., Correll, M., & Satyanarayan, A. **VisuaLint: Sketchy In Situ Annotations of Chart Construction Errors**. *EuroVis 2020.*

Hopkins, A. , Shanmugam, D., & Gadient, A. (2018, November). **Generally Exciting Inputs and How to Get Rid Of Them: A Little Network Introspection**. Robust, Interpretable Deep Learning Systems (*RIDL*) 2018 Symposium.

Hopkins, A., Meyer, M., & Goffin, P. (2017, October). Particulates Matter: Assessing Needs for Air Quality Visualization. *IEEE* VIS. 2017.

The Mathematical Contest in Modeling Meritorious Award for 2016 Problem A.

Rocky Mountain Celebration for Women in Computing Best Poster Award (2016) .

Alpha Chi National Honor Society Member (August 2014 – August 2017).

Lemma Math Society Member (January 2014–August 2017).

Related Courses

Massachusetts Institute of Technology Advances in Computer Vision (6.869), Advanced Topics in Graphics (6.838), Advanced Natural Language Processing (6.864), Data-driven Decision Making (6.883)

Westminster College Programming Languages, Probability and Statistics, Software Engineering, Database Systems, Computer Systems, Embedded Systems, Algorithms, Algorithms and Data Structures, Artificial Intelligence, Operating Systems, Computer Architecture, Quantitative Research Methods, Cognitive Neuroscience, Behavioral Neuroscience, Cognitive Psychology