MARK HAMILTON

CS PhD Candidate at MIT and Senior Engineering Manager at Microsoft

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EDUCATION

Massachusetts Institute of Technology — 2019-Present
Ph.D Student in Computer Science, NSF GRFP Fellow — GPA: 5.0/5.0
Thesis: *Unsupervised Structure Discovery with Foundation Models* — Advisor: William T Freeman

Yale University — 2012 - 2016
Bachelors of Science in Mathematics and Physics with Distinction — Magna Cum Laude, GPA: 3.9/4.0
Thesis: *Language Independent Automated Theorem Proving* — Advisor: Gregg Zuckerman

SELECTED WORK EXPERIENCE

Microsoft New England Research and Development — Cambridge, MA
Senior Engineering Manager — 2024 - Current
Senior Software Engineer — 2016 - 2024

Lead the SynapseML team (6 engineers) that builds distributed ML algorithms and products for Microsoft's largest databases. SynapseML supports thousands of production ML workflows monthly. **5.1k stars, 125 contributors, 6M downloads**. Website: `https://aka.ms/spark`

SELECTED PUBLICATIONS   SEE ALL 39 PUBLICATIONS ⬈

- Alshammari S., Hershey J., Feldmann A., Freeman W. T., <u>Hamilton MT</u>, *I-Con: A Unifying Framework for Representation Learning.* International Conf. on Learning Representations (ICLR), 2025.

- <u>Hamilton MT</u>, Hershey J., Zisserman A., Freeman W. *Separating the "Chirp" from the "Chat": Self-supervised Visual Grounding of Sound and Language.* Computer Vision and Pattern Recognition (CVPR) 2024

- <u>Hamilton MT</u>*, Fu S.*, et.al. *FeatUp: A Model-Agnostic Framework for Features at Any Resolution.* International Conference on Learning Representations (ICLR) 2024

- <u>Hamilton MT</u>, et.al. *Seeing Faces in Things: A Model and Dataset for Pareidolia.* European Conference on Computer Vision 2024

- <u>Hamilton MT</u>*, Walsh B*, et. al. *Large-Scale Automatic Audiobook Creation .* INTERSPEECH Show and Tell 2023. **TIME Top 200 Invention of 2023**

- <u>Hamilton MT</u>, Zhang Z, Hariharan B, Snavely N, Freeman W. *Unsupervised Semantic Segmentation by Distilling Feature Correspondences.* ICLR, 2022

RECENT AWARDS

2023	Winner	TIME Top 200 Inventions of 2023
2022	Winner	MIT CSAIL Alliances Student Spotlight
2021	Winner	NSF Graduate Research Fellowship
2021	Winner ($60k)	Systems That Learn Fellowship
2020	Winner ($100k)	Systems That Learn Fellowship
2019	Distinguished Speaker	IEEE High Performance Extreme Computing
2019	Editors Choice Article	American Chemical Society
2019	Cover Article	Environmental Science and Technology
2016	Winner	Howard L. Schultz Prize for Experimental Physics