

# MARK HAMILTON

MIT CS PhD and Senior Engineering Manager at Microsoft

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## EDUCATION

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<b>Massachusetts Institute of Technology</b>	2019-2025
Ph.D in Computer Science, NSF GRFP Fellow	GPA: 5.0/5.0
Thesis: <i>Unsupervised Structure Discovery with Foundation Models</i>	Advisor: William T Freeman
<b>Yale University</b>	2012 - 2016
Bachelors of Science in Mathematics and Physics with Distinction	Magna Cum Laude, GPA: 3.9/4.0
Thesis: <i>Language Independent Automated Theorem Proving</i>	Advisor: Gregg Zuckerman

## SELECTED WORK EXPERIENCE

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<b>Microsoft New England Research and Development</b>	Cambridge, MA
<i>Senior Engineering Manager</i>	2024 - Current
<i>Senior Software Engineer</i>	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, 8M downloads.** Website: <https://aka.ms/spark>

## SELECTED PUBLICATIONS

**SEE ALL 39 PUBLICATIONS** 🔗

- Alshammari S., Hershey J., Feldmann A., Freeman W. T., Hamilton MT, *I-Con: A Unifying Framework for Representation Learning*. International Conf. on Learning Representations (ICLR), 2025.
- Hamilton MT, 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
- Hamilton MT\*, Fu S.\*, et.al. *FeatUp: A Model-Agnostic Framework for Features at Any Resolution*. International Conference on Learning Representations (ICLR) 2024
- Hamilton MT, et.al. *Seeing Faces in Things: A Model and Dataset for Pareidolia*. European Conference on Computer Vision 2024
- Hamilton MT\*, Walsh B\*, et. al. *Large-Scale Automatic Audiobook Creation*. INTERSPEECH Show and Tell 2023. **TIME Top 200 Invention of 2023**
- Hamilton MT, Zhang Z, Hariharan B, Snavely N, Freeman W. *Unsupervised Semantic Segmentation by Distilling Feature Correspondences*. ICLR, 2022

## RECENT AWARDS

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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