Karima Ma

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Education

2020 - expected 2024	**Massachusetts Institute of Technology** Doctor of Philosophy in Computer Science
2017 - 2020	**University of California, Berkeley** Doctor of Philosophy in Computer Science (Transferred to MIT) GPA 4.0
2014 - 2016	**Carnegie Mellon University** Master of Computer Science, 2016. GPA: 3.63
2010 - 2014	**Dartmouth College** B.A., Economics, 2014. GPA: 3.91 Minors: Computer Science, Chinese Honors: Phi Beta Kappa, *summa cum laude*

Areas of Specialization

Domain-Specific Program Synthesis - Machine Learning - Neural Architecture Search
Image Processing - Computer Graphics - High Performance Programming

Work Experience

2020 - present	**Massachusetts Institute of Technology - CSAIL** (Cambridge, MA) Graduate Research Assistant
Summer 2024	**Adobe Creative Intelligence Lab** (Cambridge) Research Internship
Summer 2023	**Adobe Creative Intelligence Lab** (San Francisco) Research Internship
Summer 2022	**Adobe Creative Intelligence Lab** (San Jose) Research Internship
Fall 2019	**Adobe Creative Intelligence Lab** (New York City, NY) Research Internship
Summer 2018	**Facebook AI Research** (Menlo Park, CA) Research Internship
Summer 2017	**Facebook Applied Machine Learning** (Menlo Park, CA) Software Engineering Internship
2016 - 2017	**Carnegie Mellon University** (Pittsburgh, PA) Research Assistant

Teaching Experience

2023 - present	**Massachusetts Institute of Technology, Research Mentor** Undergraduate Research Opportunities Program
Fall 2021	**Massachusetts Institute of Technology, TA** Computer Graphics (6.837)
Spring 2016	**Carnegie Mellon University, TA** Parallel Computer Architecture and Programming (15-418/618)

Publications

Sketching with your voice: "Non-Phonorealistic" Rendering of Sounds via Vocal Imitation

Matthew Caren, Kartik Chandra, Joshua Tenenbaum, Jonathan Ragan-Kelley, Karima Ma
ACM Transactions on Graphics (SIGGRAPH ASIA 2024)

Searching for Fast Demosaicking Algorithms

Karima Ma, Michael Gharbi, Shoaib Kamil, Andrew Adams, Connelly Barnes, Tzu-Mao Li, Jonathan Ragan-Kelley
ACM Transactions on Graphics (SIGGRAPH 2022)

Efficient Automatic Scheduling of Imaging and Vision Pipelines for the GPU

Luke Anderson, Andrew Adams, Karima Ma, Tian Jin, Tzu-Mao Li, Jonathan Ragan-Kelley
ACM SIGPLAN (OOPSLA 2021)

Learning to Optimize Halide with Tree Search and Random Programs

Andrew Adams, Karima Ma, Luke Anderson, Riyadh Baghdadi, Tzu-Mao Li, Michael Gharbi, Benoit Steiner, Steven Johnson, Kayvon Fatahalian, Fredo Durand, Jonathan Ragan-Kelley
ACM Transactions on Graphics (SIGGRAPH 2019)

Ongoing Work

A system for automatically generating fast approximations of 1D and 2D filters across a range of throughput vs. signal quality trade-off demands *(In preparation, draft available upon request)*

Awards

2022	WiGRAPH Rising Star in Computer Graphics
2017 - 2018	ARCS Foundation Scholarship
2017	UC Berkeley EECS Excellence Award

Service

2023 - present	Massachusetts Institute of Technology, Visual Computing Seminar chair
2020, 2023-2024	ACM SIGGRAPH ASIA reviewer
2024	ACM SIGGRAPH reviewer