Yuka Ikarashi

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EDUCATION

Massachusetts Institute of Technology — Cambridge, MA
Ph.D. in Computer Science — *September 2020 –*
Advisor: Prof. Jonathan Ragan-Kelley

Massachusetts Institute of Technology — Cambridge, MA
Master of Science (S.M.) in Computer Science — *September 2020 – May 2022*
Advisor: Prof. Jonathan Ragan-Kelley

The University of Tokyo — Tokyo, Japan
Bachelor of Science in Information Science. Major GPA: 3.98/4.0 — *April 2015 – March 2020*
Awarded a Dean's Award and ranked top at the Department of Information Science.

Advisor: Prof. Takeo Igarashi

PUBLICATIONS

- **Tackling the Matrix Multiplication Micro-kernel Generation with Exo**
  Adrin Castell, Julian Bellavita, Grace Dinh, **Yuka Ikarashi**, Hctor Martnez
  In *International Symposium on Code Generation and Optimization (CGO)* 2024

- **Semantics and Scheduling for Machine Knitting Compilers**
  Jenny Lin, Vidya Narayanan, **Yuka Ikarashi**, Jonathan Ragan-Kelley, Gilbert Bernstein, Jim McCann
  In *ACM SIGGRAPH* 2023

- **Exocompilation for Productive Programming of Hardware Accelerators**
  Yuka Ikarashi*, Gilbert Louis Bernstein*, Alex Reinking, Hasan Genc, Jonathan Ragan-Kelley
  In *ACM SIGPLAN Conference on Programming Language Design and Implementation (PLDI)* 2022

- **Guided Optimization for Image Processing Pipelines**
  Yuka Ikarashi, Jonathan Ragan-Kelley, Tsukasa Fukusato, Jun Kato, Takeo Igarashi
  In *IEEE Symposium on Visual Languages and Human-Centric Computing (VL/HCC)* 2021 short paper.
  Best Short Paper Award

- **PaintersView: Automatic Suggestion of Optimal Viewpoints for 3D Texture Painting**
  Yuka Takahashi, Tsukasa Fukusato, Takeo Igarashi
  In *ACM SIGGRAPH Asia* 2019 technical brief

- **Migrating Large Codebases to C++ Modules**
  Yuka Takahashi, Oksana Shadura, Vassil Vassilev
  In *19th International Workshop on Advanced Computing and Analysis Techniques in Physics Research (ACAT)* 2019.

- **Stitch: An Interactive Design System for Hand-Sewn Embroidery**
  Yuka Takahashi, Tsukasa Fukusato
  In *ACM SIGGRAPH* 2018 poster
  ACM SIGGRAPH Student Research Competition 3rd Place Award.

- **Optimizing Frameworks' Performance Using C++ Modules-Aware ROOT**
  Yuka Takahashi, Vasil Georgiev Vasilev, Raphael Isemann
  In *23rd International Conference on Computing in High Energy and Nuclear Physics (CHEP)* 2018.

Experience

Apple
Software Dev Eng Intern @ Vector and Numerics team
Cupertino, CA
June 2023 – September 2023
Led Apple's adoption of Exo (part 2).

Amazon
Applied Scientist Intern
Remote
November 2022 – May 2023
Led Amazon Device's adoption of Exo.

Apple
Software Dev Eng Intern @ Vector and Numerics team
Cupertino, CA
June 2022 – September 2022
Led Apple's adoption of Exo (part 1).

The University of Tokyo
Project Academic Support Specialist (research staff)
Tokyo, Japan
April 2020 – May 2020

UC Berkeley
Visiting Student
Berkeley, CA
August 2019 – September 2019
Led the Guided Optimization project.

CERN
Research and Development Engineer
Geneva, Switzerland
March 2018 – February 2019
Worked on Cling C++ interpreter and Clang C++ Modules in ROOT team.

Google Summer of Code
GSoC Student
Remote
April 2017 – August 2017
Worked on a dynamic shell autocompletion project in LLVM/Clang organization.

Teaching and Mentoring

Fundamentals of Programming (6.101)
Teaching Assistant
Cambridge, MA
Spring 2023
Taught at MIT undergraduate programming class.

MIT Undergraduate Research Opportunities Program (UROP)
Mentor
Cambridge, MA
September 2021 – present
Mentored four MIT undergraduate students on research and development on Exo.

Google Summer of Code
Mentor
Remote
April 2019 – August 2019
Advised an undergraduate student on Global Modules Index project at HEP software foundation.

Security Mini-Camp
Lecturer
Japan
September 2019
Gave a compiler lecture to young students in the government-funded security lecturing project.

Awards

- **MIT Sandbox (2022)** Granted $1000 to work on a startup.

- **Masason Foundation Fellowship (2020-2025)** Granted 5 years of tuition, stipend, and travel costs.

- **MIT Great Educators Fellowship (2020)** Granted 9 months of tuition and stipend.

- **Dean's Award (2020)** Dean's Award from the University of Tokyo, for excellent academic performance and bachelor thesis. I was ranked top at the Department of Information Science.

- **Funai Overseas Scholarship (2021-2023)** Granted 2 years of tuition and stipend.

- **The University of Tokyo Study and Visit Abroad Program (2019)** Granted 2 months of stipend and travel costs.

COMMUNITY SERVICE

- **Japanese Association of MIT (JAM)** President, 2022-2024
- **Japanese Graduate Student Association** Vice President, 2020-2023
- **.406 Ventures Fellowship** Student Fellow, 2021-2023
- **E14 Fund Fellowship** Student Fellow, 2022-2023