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

SELECTED PUBLICATIONS AND TALKS

- **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 (overall Acceptance Rate 20%).

- **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 (overall Acceptance Rate 21%).
  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.

- **A Better Shell Command-line Autocompletion for Clang**
  Yuka Takahashi
  In *LLVM developer's meeting* 2017 Lightning Talk.

EXPERIENCE

Amazon   Remote
Applied Scientist Intern   *November 2022 – May 2023*
Applying Exo and user-scheduling techniques to Amazon Device's hardware.

Apple Inc.   Cupertino, CA
Software Dev Eng Intern @ Vector and Numerics team   *June 2022 – September 2022*
Applied Exo to Apple's hardware.

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

UC Berkeley — Berkeley, CA
Visiting Student — *August 2019 – September 2019*
Worked on Halide Scheduling Tool under a supervision of Prof. Jonathan Ragan-Kelley.

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

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

Teaching and Mentoring

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

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

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

Security Mini-Camp — Japan
Lecturer — *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-
- **Japanese Graduate Student Association** Vice President, 2020-
- **.406 Ventures Fellowship** Student Fellow, 2021-
- **E14 Fund Fellowship** Student Fellow, 2022-