

EDUCATION

Massachusetts Institute of Technology

Ph.D. in Computer Science

Advisor: Prof. Jonathan Ragan-Kelley

Cambridge, MA

September 2020 –

Massachusetts Institute of Technology

Master of Science (S.M.) in Computer Science

Advisor: Prof. Jonathan Ragan-Kelley

Cambridge, MA

September 2020 – May 2022

The University of Tokyo

Bachelor of Science in Information Science. Major GPA: 3.98/4.0

Awarded a Dean's Award and ranked top at the Department of Information Science.

Advisor: Prof. Takeo Igarashi

Tokyo, Japan

April 2015 – March 2020

PUBLICATIONS

- **Exo2: Growing a Scheduling Language**

Yuka Ikarashi, Kevin Qian, Samir Droubi, Alex Reinking, Gilbert Bernstein, Jonathan Ragan-Kelley

In *ACM ASPLOS* 2025

- **UFO Instruction Graphs Are Machine Knittable**

Jenny Lin, Yuka Ikarashi, Gilbert Bernstein, Jim McCann

In *ACM SIGGRAPH Asia* 2024 (journal track)

- **Tackling the Matrix Multiplication Micro-kernel Generation with Exo**

Adrian Castello, Julian Bellavita, Grace Dinh, Yuka Ikarashi, Hector Martinez

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 (journal track)

- **Exocompilation for Productive Programming of Hardware Accelerators**

Yuka Ikarashi*, Gilbert Louis Bernstein*, Alex Reinking, Hasan Genc, Jonathan Ragan-Kelley

In *ACM 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 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

Led Apple's adoption of Exo (part 2).

Cupertino, CA

June 2023 – September 2023

Amazon

Applied Scientist Intern

Led Amazon Device's adoption of Exo.

Remote

November 2022 – May 2023

Apple

Software Dev Eng Intern @ Vector and Numerics team

Led Apple's adoption of Exo (part 1).

Cupertino, CA

June 2022 – September 2022

The University of Tokyo

Project Academic Support Specialist (research staff)

UC Berkeley

Visiting Student

Led the Guided Optimization project.

Tokyo, Japan

April 2020 – May 2020

Berkeley, CA

August 2019 – September 2019

CERN

Research and Development Engineer

Worked on Cling C++ interpreter and Clang C++ Modules in ROOT team.

Geneva, Switzerland

March 2018 – February 2019

Google Summer of Code

GSoC Student

Worked on a dynamic shell autocompletion project in LLVM/Clang organization.

Remote

April 2017 – August 2017

TEACHING AND MENTORING

MIT Undergraduate Research Opportunities Program (UROP)

Mentor

Mentored five MIT undergraduate students on research and development on Exo.

Cambridge, MA

September 2021 – present

Fundamentals of Programming (6.101)

Teaching Assistant

Taught at MIT undergraduate programming class.

Cambridge, MA

Spring 2023

Google Summer of Code

Mentor

Advised an undergraduate student on Global Modules Index project at HEP software foundation.

Remote

April 2019 – August 2019

Security Mini-Camp

Lecturer

Gave a compiler lecture to young students in the government-funded security lecturing project.

Japan

September 2019

AWARDS

- **Rising Stars in EECS (2024)**
- **Quad Fellowship (2024)** Granted \$40,000
- **ML and Systems Rising Stars (2024)**
- **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

- **CGO** Artifact Evaluation Committee, 2025
- **SIGGRAPH Asia** Reviewer, 2024
- **ICFP** Artifact Evaluation Committee, 2024
- **MIT PLR** Program Committee, 2023-2024
- **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