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**EDUCATION**

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**Massachusetts Institute of Technology***Ph.D. in Computer Science*

Advisor: Prof. Jonathan Ragan-Kelley

Cambridge, MA

*September 2020 –***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*

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**SELECTED PUBLICATIONS AND TALKS**

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**• Exocompilation for Productive Programming of Hardware Accelerators****Yuka Ikarashi\***, Gilbert Louis Bernstein\*, Alex Reinking, Hasan Genc, Jonathan Ragan-KelleyIn *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 IgarashiIn *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 IgarashiIn *ACM SIGGRAPH Asia 2019* technical brief (overall Acceptance Rate 20%).**• Migrating Large Codebases to C++ Modules****Yuka Takahashi**, Oksana Shadura, Vassil VassilevIn *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 FukusatoIn *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 IsemanIn *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.

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**EXPERIENCE**

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**Apple Inc.***Software Dev Eng Intern @ Vector and Numerics team*

Worked on applying Exo to Apple's internal hardware.

Cupertino, CA

*June 2022 – September 2022***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*

Worked on Halide Scheduling Tool under a supervision of Prof. Jonathan Ragan-Kelley.

## 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 EXPERIENCE

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### MIT Undergraduate Research Opportunities Program (UROP)

*Mentor*

Advised an undergraduate student on supporting Intel AMX backend for Exo.

Cambridge, MA

September 2021 – May 2022

### 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*

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

Japan

September 2019

## INVOLVED PROJECTS

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- **ROOT** An open-source data analysis framework widely used in High Energy Physics field. Committer and an everyday contributor since March 2018. Maintaining Cling C++ interpreter and developing ROOT Runtime C++ Modules.
- **LLVM/Clang** An open-source compiler infrastructure. Committer and a regular contributor since 2017. Maintaining autocompletion feature and options in Clang Driver and developing C++ Modules in Clang ASTReader.

## AWARDS

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- **Masason Foundation Fellowship (2020-2025)** Granted 5 years of tuition, stipend, and travel costs.
- **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.
- **Research Internship Grant** *The university of Tokyo Study and Visit Abroad Program (SVAP)*, 2019.