

Christophe Gyurgyik

PHD CANDIDATE · COMPUTER SCIENCE

Stanford University

✉ gyurgyikcp@gmail.com | 🏠 <https://cgyurgyik.github.io/> | 📷 cgyurgyik

Education

Stanford University

PHD CANDIDATE

- Research Advisor: Fredrik Kjolstad

Stanford, CA

2023 - present

Cornell University

BACHELOR'S DEGREE, COMPUTER SCIENCE

- Minor in Science & Technology Studies
- Research Advisor(s): Adrian Sampson, Rachit Nigam

Ithaca, NY

2018-21

Professional Experience

Compiler Engineer, Google.

2021-23 Worked on the XLA compiler for the TPU architecture. Achieved x% improvements in end-to-end weighted latency of LLMs. Over 200,000 lines of code reviewed with C++ readability, and over 200,000 authored.

Research Assistant, Computer Architecture & Programming Abstractions (CAPRA), Cornell University.

2020-21 Shepherded the Calyx dialect into the open source CIRCT project. This is still used presently for ongoing research. Additionally, added multiple frontends to iterate on the design of the Calyx language.

2020 **Software Engineer Internship**, Google

2019 **Engineer Practicum Internship**, Google

Sergeant and Marksmanship Instructor, United States Marine Corps

2013-17 Meritoriously promoted twice, distinguished honor graduate on multiple occasions, First Place Pistol (Third Place overall) in the Pacific Division Marksmanship Match, and awarded the Navy & Marine Corps Achievement Medal.

Publications

CONFERENCES

[arXiv '25 (under submission)] Data Layout Polymorphism for Bounding Volume Hierarchies.

Christophe Gyurgyik, Alexander J Root, Fredrik Kjolstad

[arXiv '25 (under submission)] Compiling Set Queries into Work-Efficient Tree Traversals.

Alexander J Root, Christophe Gyurgyik, Purvi Goel, Kayvon Fatahalian, Jonathan Ragan-Kelley, Andrew Adams, Fredrik Kjolstad

[OOPSLA '24] Compilation of Shape Operators on Sparse Arrays.

Alexander J Root, Bobby Yan, Peiming Liu, Christophe Gyurgyik, Aart J.C. Bik, Fredrik Kjolstad

[ASPLOS '23] Stepwise Debugging for Hardware Accelerators.

Griffin Berlstein, Rachit Nigam, Christophe Gyurgyik, Adrian Sampson

WORKSHOPS & SHORT PAPERS

[YArch '24] Streaming Tensor Programs: A Programming Abstraction for Streaming Dataflow Accelerators.

Gina Sohn, Christophe Gyurgyik, Genghan Zhang, Suguna Velury, Paul Mure, Nathan Zhang, Kunle Olukotun

[WOSET '21] A Toolkit for Designing Hardware DSLs.

Griffin Berlstein, Rachit Nigam, Christophe Gyurgyik, Adrian Sampson

Awards, Fellowships, & Grants

- 2025 NSF GRFP Comp/IS/Eng Honorable Mention, NSF
- 2025 Qualcomm Innovation Fellowship (QIF), Qualcomm
- 2025 Teaching Assistant Recognition Bonus, Stanford University
- 2023 Cloud Tech Impact Awards (CTIA) - LLM serving optimizations, Google
- 2023 Spot Bonus (VP of Engineering) - LLM compiler optimizations, Google
- 2019-23 Peer Bonus $\times 4$, Google
- 2023 Edwin Sibley Webster Graduate Fellowship, MIT
- 2020 Big Red Vets Land Grant, Cornell University Veterans Association

Presentations

INVITED TALKS

- Nov '25. *Stanford SystemX Alliance*. Lightning talk & poster for ongoing work on data layout abstractions.
- Oct '25. *Science Small Groups*. Academic and career workshop for community college students.
- Aug '25. *Stanford Portal Center*. Lightning talk & poster for ongoing work on data layout abstractions.
- Sep '25. *Stanford Portal Center*. Machine learning compiler techniques and tribulations.
- Jun '24. *Cornell University CAPRA group*. Exploration of e-graph optimization for finite state machine generation.
- Apr '21. *Applications Driving Architectures (ADA)*. The Calyx language and its new frontends.

Teaching Experience

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|-------------|------------------------------------------------------------------------------|-------------|
| Winter 2026 | CS343D: Domain-Specific Programming Models and Compilers, Teaching Assistant | Stanford |
| Winter 2025 | CS343D: Domain-Specific Programming Models and Compilers, Teaching Assistant | Stanford |
| Spring 2019 | CS2110: Data Structures & Object Oriented Programming, Teaching Assistant | Cornell |
| 2015-17 | Marksmanship, Instructor | Pu'uola, HI |

Mentoring

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| 2024-2025 | Arnold Tianyi Yang, Undergraduate, Stanford University | Stanford, CA |
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Outreach & Professional Development

SERVICE AND OUTREACH

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|---------|-------------------------------------------------|----------------|
| 2025- | Science Small Groups, Mentor | Stanford, CA |
| 2025- | Stanford Alpine Club, Vice President | Stanford, CA |
| 2023- | Stanford PhD Visit Day(s), Volunteer | Stanford, CA |
| 2018-22 | Cornell University Veterans Association, Member | Ithaca, NY |
| 2019 | Student Veterans of America, Volunteer | |
| 2017 | Rubicon, Disaster Relief | Beaumont, TX |
| 2017 | Girl Scouts of the USA, Volunteer | Kilohonato, HI |
| 2017 | AccesSurf, Lifeguard | Oahu, HI |
| 2011-13 | Student Groups on Race Relations, Member | Cleveland, OH |

OPEN SOURCE

Bonsai, contributor and maintainer of the Bonsai compiler.

Circuit Intermediate Representations (IR) Compilers and Tools (CIRCT), contributor and maintainer of the Calyx dialect.