

Christophe Gyurgyik

PHD CANDIDATE · COMPUTER SCIENCE

Stanford University

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Education

Stanford University

Stanford, CA

2023 - present

PHD CANDIDATE

- Research Advisor: Fredrik Kjølstad

Cornell University

Ithaca, NY

2018-21

BACHELOR'S DEGREE, COMPUTER SCIENCE

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

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** ×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

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

- 2024-2025 **Arnold Tianyi Yang**, Undergraduate, Stanford University Stanford, CA

Outreach & Professional Development

SERVICE AND OUTREACH

- 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 Kilohana, HI
- 2017 **AccessSurf**, 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.