

# Christophe Gyurgyik

PHD CANDIDATE · COMPUTER SCIENCE

Stanford University

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## Education

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### Stanford University

PHD CANDIDATE

Stanford, CA

2023 - present

- Research Advisor: Fredrik Kjølstad

### Cornell University

BACHELOR'S DEGREE, COMPUTER SCIENCE

Ithaca, NY

2018-21

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

## Professional Experience

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### 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.

### Software Engineer Internship, Google

### 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

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### CONFERENCES

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

**Christophe Gyurgyik**, Alexander J Root, 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

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- 2025 **NSF GRFP Comp/IS/Eng Honorable Mention**, NSF
- 2025 **Qualcomm Innovation Fellowship (QIF)**, Qualcomm
- 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

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### INVITED TALKS

- Nov '25. *Stanford SystemX Alliance*. Lightning talk & poster for ongoing work on data layout abstractions.
- Aug '25. *Stanford Portal*. Lightning talk & poster for ongoing work on data layout abstractions.
- Sep '25. *Stanford Portal*. 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 2025	<b>CS343D: Domain-Specific Programming Models and Compilers</b> , Teaching Assistant	Stanford University
Spring 2019	<b>CS2110: Data Structures &amp; Object Oriented Programming</b> , Teaching Assistant	Cornell University
2015-17	<b>Marksmanship</b> , Instructor	Pu'uola Range, HI

## Mentoring

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

## Outreach & Professional Development

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### SERVICE AND OUTREACH

- 2025 **Science Small Groups**, Mentor Stanford, CA
- 2023-25 **Stanford University PhD Visit Day**, 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 **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.