

# Krystal Maughan

Krystal.maughan@gmail.com

Github: <https://github.com/kammitama5>

Tel: 607.342. 6970

Blog: <https://kammitama5.github.io/>

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*Research Interests: Differential Privacy, Compilers, Neural Networks*

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## EDUCATION

**University of Vermont, PhD candidate**

**2019-present**

Area: Programming Languages Research

Data Privacy, Programming Languages, Neural Networks

**Skills:** Haskell, Python, LaTeX, Jupyter, PySpark, PyTorch, Git

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## RELEVANT WORK EXPERIENCE

**Autodesk (Pier 9, San Francisco)**

**2020**

Software Engineering for Forge Engineering Project

Supervised by Manager Barry Tsai (Summer for Code 2040 Fellowship)

**Teacher's Assistant, Fall 2019 (Vermont)**

**2019**

Programming with Matlab (taught by Radhakrishna Dasari)

Data Privacy (taught by Joe Near)

**Graduate Writing Consultant, Spring 2020 (Vermont)**

**2020**

Writing Mentor and Consultant for graduate students

Technical Writing Consultant for fields as broad as Materials Science to History

**Mercury (San Francisco)**

**2019**

Wrote Haskell back-end application for stealth fintech startup as software intern

Used Haskell, Stack, Yesod, Nix, Postgres. Supervised by Max Tagher. (Summer)

**Apple, Inc. (Sunnyvale)**

**2019**

Software Intern (Spring)

**Google Summer of Code for Haskell.org (remote)**

**2018**

Wrote Debugging tools for CodeWorld<sup>1</sup>,

A Google project sponsored by Haskell.org, under

Supervision of Chris Smith (Google) and

Gabriel Gonzalez (Awake Security).

Used Haskell, GHCJS, Cabal.

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<sup>1</sup> CodeWorld: <https://github.com/google/codeworld/commits?author=kammitama5>

<b>Mozilla, Increasing Rust's Reach (remote)</b>	<b>2018</b>
<i>Worked on Implied Boolean Predicates<sup>2</sup>,</i>	
<i>For Command line tools in Rust, under</i>	
<i>Supervision of Aaron Power and Ed Page.</i>	
<i>Worked in Rust, used Travis Continuous Integration</i>	

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## **MERIT-BASED GRANTS / SCHOLARSHIPS**

NCWIT Collegiate Award Finalist	2019
Code2040 2020 Fellow (1 of 80)	2019
WiCyS Student Scholarship (Women in Cybersecurity)	2019
Udacity Technology Scholarship (AI track): Intro to Deep Learning with Pytorch	2019
Helium Grant (chosen as 1 of 11 out of 700)	2018
EaRI Career Scholarship, (R Data Science Scholarship) - declined offer	2018
Udacity Bertelsmann Data Science Scholarship - declined offer	2017
AT and T Aspire to Tech grant Winner	2017
NCAS Workshop participant (NASA Community College Aerospace Scholars)	2016
Who's Who/ Peggy Williams Memorial Scholarship/ Best BFA Award (Best of Major)	2008

## **OTHER GRANTS/ FELLOWSHIPS**

RWC2020 (Real World Crypto: registration, flight, lodging) Grant via IACR	2020
CRA-WP Grad Cohort for Women (covers flight, registration, lodging)	2019
CRA-WP Grad Cohort for Underrepresented Minorities (covers flight, registration, lodging)	2019
Neurips Conference Travel Grant (includes free registration)	2019
Sage-Days-104 : To work on SageMath Software: Arithmetic Dynamics	2019
Simons Institute (Berkeley) Error-Correcting Codes and High-Dimensional Expansion Boot Camp (attendee)	2019
ICERM (Brown University) Encrypted Search Workshop Grant (Lodging provided)	2019
Cornell Number Theory Conference Grant (Lodging provided)	2019
MSRI (Mathematical Sciences Research Institute) Grants to attend Connections for Women:	2019
- Derived Algebraic Geometry, Birational Geometry and Moduli Spaces workshop	
- Introductory Workshop: Derived Algebraic Geometry and Birational Geometry And Moduli Spaces	
NASA L'Space NPWEE Concept Proposal writing programme participant	2019
NASA L'Space Proposal/Review Academy (patentable research proposal for funding)	2019
NASA L'Space Academy (virtual team & mentorship with NASA scientists Level 1)	2019
Racket Summer School (National Science Foundation Grant)	2018-2019
PLMW (Programming Languages Mentorship Workshop)	2018
ICFP (International Conference Functional Programming)	
PLMW(Programming Languages Mentorship Workshop)	2018
PLDI (Programming Languages Design and Implementation)	
OPLSS (Oregon Programming Languages Summer School Grant) - declined offer	2018

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<sup>2</sup> Assert Predicates.rs: <https://github.com/assert-rs/predicates-rs/commits?author=kammitama5>  
Assert Cmd.rs: [https://github.com/assert-rs/assert\\_cmd/commits?author=kammitama5](https://github.com/assert-rs/assert_cmd/commits?author=kammitama5)

**Developer Conference Grants to attend:** Twilio's Signal Conf 2019, Curry On! 2019, RustConf 2018, LambdaConf 2017/2018, Strange Loop 2017, Software Craftsmanship North America (SCNA), Clojure Conj 2016/2017, Clojure West 2017, Chrome Dev Summit 16-18, Google IO 2016-2019

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## **SERVICE**

Student volunteer, ICFP (International Conference Functional Programming)	2018
Student volunteer, PLDI (Programming Languages Design and Implementation)	2018
Student volunteer, POPL (Principles of Programming Languages)	2018

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## **MENTORSHIP**

Interviewed for CareerGirls.org Boston (videographed at MIT)	2019
Google Developer Student Club Lead (for University of Vermont)	2019

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## **RESEARCH TALKS**

"Personalized Robotic Control using MISL" for UVM/CS++ Research Day	2019
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## **PUBLICATIONS / POSTS**

Google Summer of Code " <a href="#">Breaking the Time-Space Barrier with Haskell</a> "	2018
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## **INDUSTRY TALKS**

"Magic Gnomes: A GHC Compiler talk (5-minute talk at Github for Sentry's Show & Tell)	2019
"Denotational Semantics" (2 minute Lightning Talk for Meetup group)	2018
"Recap of Google I/O 2018" (20 minute presentation at Google Developer Group LA)	2018

## **SCHOOL TALKS**

CS Crew Project talk : contributing to Maths software (CodeWorld, SageMaths)	2019
CS Crew GSoC talk (40-minute talk about Google Summer of Code and Internships)	2019
CS293 Technical Interviewing Workshop Talk	2019

## **CLASSES (PhD)**

Machine Learning; taught by Safwan Wshah (Spring)	2020
Compiler Construction; taught by Joe Near using Haskell (Spring)	
Evolutionary Robotics; taught by Josh Bongard (Spring)	

Software Verification; taught by David Darais using Agda (Fall)	2019
Data Privacy; taught by Joe Near using Python (Fall)	
Computer Human Interaction; taught by Josh Bongard (Fall)	