

# Krystal Maughan

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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)

**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**

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

## **OTHER GRANTS/ FELLOWSHIPS**

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