

# 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, Git

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## RELEVANT WORK EXPERIENCE

**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.

**Mozilla, Increasing Rust's Reach (remote)**

**2018**

Worked on Implied Boolean Predicates<sup>2</sup>,

For Command line tools in Rust, under

Supervision of Aaron Power and Ed Page.

Worked in Rust, used Travis Continuous Integration

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

<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)

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

<i>Code2040 2020 Finalist</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>Simons Institute (Berkeley) Error-Correcting Codes and High-Dimensional Expansion Boot Camp (attendee)</i>	2019
<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 Connections for Women:</i>	2019
<ul style="list-style-type: none"><li>- <i>Derived Algebraic Geometry, Birational Geometry and Moduli Spaces workshop</i></li><li>- <i>Introductory Workshop: Derived Algebraic Geometry and Birational Geometry And Moduli Spaces</i></li></ul>	
<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

**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**

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

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## **MENTORSHIP**

<i>Google Developer Student Club Lead (for University of Vermont)</i>	2019
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## **RESEARCH TALKS**

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

## **PUBLICATIONS / POSTS**

Google Summer of Code [\*"Breaking the Time-Space Barrier with Haskell"\*](#) 2018

## **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

## **CLASSES TAKEN (PhD)**

*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)*