Krystal Maughan

Krystal.maughan@gmail.com

Github: https://github.com/kammitama5

Tel: 607.342. 6970

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

Research Interests: Differential Privacy, Fairness, Neural Networks

---

University of Vermont, PhD candidate	***2019-present***

Differential Privacy, Fairness, Neural Networks

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

---

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/Spring 2019-2020 (Vermont)	***2019-2020***
Compiler Construction with Haskell (taught by Joe Near)	*2020*

Advanced Web Design (taught by Bob Erickson)

Programming with Matlab (taught by Radhakrishna Dasari)	*2019*

Data Privacy with Jupyter, Python (taught by Joe Near)

Graduate Writing Consultant, Fall 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, Wrote code for Security and Cloud at Scale (Spring)

Google Summer of Code for Haskell.org (remote)	***2018***

Wrote Debugging tools for CodeWorld[1],

A Google project sponsored by Haskell.org, under

Supervision of Chris Smith (Google) and

Gabriel Gonzalez (Awake Security).

Used Haskell, GHCJS, Cabal.

---

[1] CodeWorld: https://github.com/google/codeworld/commits?author=kammitama5

Mozilla, Increasing Rust's Reach (remote)   **_2018_**
Worked on Implied Boolean Predicates[2],
For Command line tools in Rust, under
Supervision of Aaron Power and Ed Page.
Worked in Rust, used Travis Continuous Integration

MERIT-BASED GRANTS / SCHOLARSHIPS / FELLOWSHIPS

Mentee, Lighthouse3 AI Ethics Mentoring Externship with F. McEvoy (1 of 20 chosen)	_2020_
BRAID Funding to attend Grace Hopper Conference (courtesy of UVM)	_2020_
NCWIT Change Leader Scholar (1 of 30 chosen)	_2020_
NCWIT Collegiate Award Finalist (1 of 85)	_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_
EaRl 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

Financial Aid Grant, SciPy (Scientific Computing with Python)	_2020_
Participant, Discover Bloomberg: Women in Engineering event	_2020_
LXAI+BAI@GTC Nvidia Digital DLI Workshop Scholarship Award for DLI workshop	_2020_
"Applications of AI for Anomaly Detection [LDLIW2249] (Deep Learning Institute at GTC)	
ICERM (Brown University) Variable Precision in Mathematical & Scientific Thinking	_2020_
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 (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	_2019_
Expansion Boot Camp (attendee)	
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:	
Optimal Transport and applications to machine learning and statistics	_2020_
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_

---

[2] 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

OTHER GRANTS/ FELLOWSHIPS

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

Developer Conference Grants to attend:

AppSec (LA) 2019, TechTogetherBoston 2020, 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

REVIEWER

Committee Reviewer, HCI Track, GHC (Grace Hopper Conference)	2020
Chair Reviewer, PML4DC (Practical ML for Developing Countries) workshop, ICLR (International Conference on Learning Representations)	2020
Reviewer, Tapia Conference (Panels and Workshops)	2020
Reviewer, Travel Grant Applications, Black in AI for AAAI (Association for the Advancement of Artificial Intelligence)	2020
Reviewer, Travel Grant Applications, Clojure Conj (2 rounds)	2017

SERVICE (AI/Machine Learning)

Volunteer, ICLR (International Conference on Learning Representations)	2020
Member, MD4SG (Mechanism Design for Social Good); Education working group	2020
Chair, AAAI Black in AI Annual Lunch	2020
Panelist, AAAI Try AI Workshop	2020
Invited Panelist, CRAFT workshop, FAT* conference (declined offer)	2020

SERVICE (Other)

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

RESEARCH TALKS & POSTER PRESENTATIONS

Carnegie Mellon's (CMU) AI for Social Good Symposium (poster, 2 min talk)	2020
"Personalized Robotic Control using MISL" for UVM/CS++ Research Day (20 min talk)	2019

WRITING / PUBLICATIONS / POSTS

Technical Writer, OpenMined Writing Team (technical articles on Deep Learning And Differential Privacy)	2020
Google Summer of Code "[Breaking the Time-Space Barrier with Haskell](#)"	2018

INDUSTRY TALKS

Invited Guest, Corecursive Podcast (Technical Podcast)	2020
Women in Data Science talk "Why conferences matter" (40 min NeurIPS inspired talk)	2020
"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
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)

Secure Computation; taught by Joe Near using Python (Fall)	2020
Numerical Analysis; taught by Chris Danforth (Fall)	
Privacy, Law, Policy & Design by Ryan Kriger (Fall)	
Machine Learning; taught by Safwan Wshah using Python (Spring)	
Doctoral Research with advisors Joe Near and David Darais (Spring, Fall)	

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)	

ONLINE LEARNING (SELECTED)

DeepLearning.ai	2020

- Neural Networks and Deep Learning
- Improving Deep Neural Networks: Hyperparameter Regularization and Optimization
- Structuring Machine Learning Projects