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

Research Assistant, PLAID Lab (Vermont) ***2019-present***
Supervisors: Joe Near and David Darais: Research on Provable Fairness and Privacy Using Machine Learning. Funded via Amazon Research Fellowship (2020-2022)

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

Autodesk, Summer 2020 (Pier 9, San Francisco: remote) ***2020***
Research Intern for Forge Team

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)

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 RESEARCH MENTORSHIPS

Mentee, Algorithmic Game Theory Mentoring Workshop (AMW) 2020
(co-located with EC 2020)
Mentee, LatinX in AI Research Workshop Mentorship with J. Barajas (ICML 2020) 2020
Mentee, Lighthouse3 AI Ethics Mentoring Externship with F. McEvoy (1 of 20 chosen) 2020

MERIT-BASED GRANTS / SCHOLARSHIPS / FELLOWSHIPS

ALife Student Scholarship Recipient (to attend ALife Conference) 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
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

Financial Aid Grant, SciPy (Scientific Computing with Python) 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
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*

Connections for Women: *2019*

- *Derived Algebraic Geometry, Birational Geometry and Moduli Spaces workshop*
- *Introductory Workshop: Derived Algebraic Geometry and Birational Geometry And Moduli Spaces*

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*

INDUSTRY PhD INVITATIONS

Participant, Discover Bloomberg: Women in Engineering event (New York, remote) *2020*

Participant, Twitter PhD ML Flock Event (New York, Boston office) *2019*

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

Reviewer and Programme Committee Member, LXAI@ICML Workshop *2020*

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)

WiML Senior Program and Mentorship Co-Chair, WiML (NeurIPS) *2020*

Invited Panelist, Morehouse@Momentum Coding School, "The Data Don't Lie" *2020*

Invited Panelist, Career Girls AI Virtual Camp *2020*

Volunteer, ICML 2020 (International Conference on Machine Learning) *2020*

Volunteer, EC'20 (Economics and Computation) *2020*

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*

SERVICE (Other)

Student volunteer, PLDI (Programming Languages Design and Implementation) *2018*
Student volunteer, POPL (Principles of Programming Languages) *2018*
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*

PRESS

Featured by Women of Silicon Valley, May Edition *2020*
Interviewed for CareerGirls.org Boston (videographed at MIT) *2019*
Featured by Coursera (Learner Story) *2017*

FUNDRAISING / GRANT WRITING

e-Kaggle Days, Responsible for securing approx $20,000 in sponsorship funds *2020*

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)

CLASSES (RELATED)

Participant (1 of 18), "Dark Matters", School for Poetic Computation *2020*
(taught by American Artist : workshop on Surveillance, data, ethics, history of Silicon Valley)

ONLINE LEARNING (SELECTED)

DeepLearning.ai *2020*

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