Krystal Maughan

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Research Interests: Differential Privacy, Fairness, Neural Networks

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

Differential Privacy, Fairness, Neural Networks
Skills: Haskell, Python, LaTeX, Jupyter, PySpark, PyTorch, Tensorflow, 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/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.

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[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

BRAID Funding to attend Grace Hopper Conference (courtesy of UVM)	2020
NCWIT Change Leader Scholar	2020
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
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 "Applications of AI for Anomaly Detection [LDLIW2249] (Deep Learning Institute at GTC)	2020
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 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:

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
NASA L'Space Academy (virtual team & mentorship with NASA scientists Level 1)	2019

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[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

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