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

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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

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RELEVANT WORK EXPERIENCE
Autodesk: *Software Engineering Intern (Pier 9, San Francisco)* *2020*
Mercury: *Software Engineering Intern (San Francisco)* *2019*
Apple, Inc.: *Software Engineering Intern (Sunnyvale)* *2019*
Google Summer of Code: *Developer for Haskell.org (remote)* *2018*
Mozilla: *Increasing Rust's Reach Developer (remote)* *2018*

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*

MERIT-BASED GRANTS / SCHOLARSHIPS
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) *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*

MERIT-BASED GRANTS / SCHOLARSHIPS

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
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

REVIEWER

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

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*

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

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*