Krystal Maughan

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Research Interests: Differential Privacy, Fairness, Machine Learning

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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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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)

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

Research Intern for Forge Team

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

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)	

RELEVANT WORK EXPERIENCE

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 MENTORSHIPS / RESEARCH MENTORSHIPS

Mentee, Global Outreach Mentorship with Dr. Swathi Gupta (EC 2020)	*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*
Mentee, Code2040 Fellowship with Ben Waber	*2020*

MERIT-BASED GRANTS / SCHOLARSHIPS

TechX Social Impact / Harvard Franklin Fellowship (1 of 12)	2020
Participant, Algorithmic Game Theory Mentoring Workshop (AMW) (co-located with EC 2020)	2020
WiML ICML Travel Funding Grant	2020
ALife Student Scholarship Recipient (to attend ALife Conference)	2020
BRAID Funding to attend Grace Hopper Conference (courtesy of UVM)	2020
Udacity's Machine Learning Scholarship for Microsoft Azure	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
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

Grace Hopper Conference	2020
Women of Color in Technology Complimentary Registration	
Financial Aid Grant, SciPy (Scientific Computing with Python)	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
Racket Summer School (National Science Foundation Grant)	2018-2019

OTHER GRANTS/ FELLOWSHIPS

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*

ACADEMIC 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	*2020*
Reviewer, Tapia Conference (Panels and Workshops)	*2020*
Reviewer, Travel Grant Applications, Black in AI for AAAI	*2020*
Reviewer, Travel Grant Applications, Clojure Conj (2 rounds)	*2017*

ACADEMIC SERVICE (AI/Machine Learning)

WiML Senior Program and Mentorship Co-Chair, WiML (NeurIPS)	*2020*
Session Facilitator, ICML 2020 for "Recommender System Research in Industry" (1 of 2)	*2020*
Volunteer ACL (Association of Computational Linguistics)	*2020*
Co-organizer, ACL (Association of Computational Linguistics) Black in AI Socials	*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*

ACADEMIC SERVICE (Other)

Student Volunteer, ICFP (International Conference Functional Programming)	*2020*
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*
Student volunteer, SPLASH	*2018*
(Systems, Programming, Languages, and Applications) (declined offer)	

NON-ACADEMIC SERVICE

Judge, DataKind, Data.org, Inclusive Growth and Recovery Challenge	*2020*
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 PhD INVITATIONS

Participant, Microsoft Research, Frontiers in Machine Learning (Redmond, remote)	*2020*
Participant, Discover Bloomberg: Women in Engineering event (New York, remote)	*2020*
Participant, Twitter PhD ML Flock Event (New York, Boston office)	*2019*

PRESS

VentureBeat "AI needs systemic solutions to systemic bias, injustice and inequality"	*2020*
Featured by Women of Silicon Valley, June Edition, 16 "Caribbean Techies"	*2020*
Featured by Women of Silicon Valley, May Edition	*2020*
Interviewed for CareerGirls.org Boston (videographed at MIT)	*2019*
Featured by Coursera (Learner Story)	*2017*

INDUSTRY TALKS

Presenter, VentureBeat's Transform 2020 Wrap-up for panel on Ethics and AI	*2020*
Moderator, VentureBeat's Transform 2020 panel on Ethics and AI	*2020*
Interviewed for Podcast, Women of Silicon Valley	*2020*
Invited Panelist, Career Girls AI Virtual Camp	*2020*
Invited Speaker, Sister to Sister International, Inc (STSI) on AI, Privacy, Ethics	*2020*
Invited Panelist, Morehouse@Momentum Coding School, "The Data Don't Lie"	*2020*
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*

OTHER (NON-INDUSTRY) TALKS

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)	
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; guests included Dr. Simone Browne, Stephanie Dinkins and
Rashida Richardson)

ONLINE LEARNING (SELECTED)

Participant, IBM Qiskit Global Quantum Computing Summer School   *2020*
Participant, PL+HCI Swimmer Summer School   *2020*
(Programming Languages + Human Computer Interaction)

DeepLearning.ai   *2020*
- Neural Networks and Deep Learning
- Improving Deep Neural Networks: Hyperparameter Regularization and Optimization
- Structuring Machine Learning Projects

FutureLearn
- "Empire: The Controversies of British Imperialism"   *2020*
- "Functional Programming in Haskell"   *2017*