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

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*
PLMW (Programming Languages Mentorship Workshop)	*2018*
ICFP (International Conference Functional Programming)	

OTHER GRANTS/ FELLOWSHIPS

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*
Co-organizer, ALife Hackathon   *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   *2020*
And Differential Privacy)
Google Summer of Code "*Breaking the Time-Space Barrier with Haskell*"   *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

PRESS

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

Moderator, VentureBeat's Transform 2020 panel on Ethics and AI	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 and Rashida Richardson)	

ONLINE LEARNING (SELECTED)

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

ONLINE LEARNING (SELECTED)

FutureLearn

"Empire: The Controversies of British Imperialism"   *2020*

"Functional Programming in Haskell"   *2017*