

# Krystal Maughan

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*Research Interests: Applied Cryptography, Privacy, Provable Fairness, Machine Learning*

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## **University of Vermont, PhD candidate**

**2019-present**

*Applied Cryptography, Fully-Homomorphic Encryption, ZK Proofs, Differential Privacy, Provable Fairness, Machine Learning*

**Skills:** Python, R, Haskell, Matlab, Sage, LaTeX, Jupyter, SQL, AWS, PySpark, Sparklyr, Tensorflow, Git

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## **Research Assistant (Vermont)**

**2019-present**

*Supervisor: Joe Near: Research on Provable Fairness and Privacy*

*Using Machine Learning. Funded via Amazon Research Award (2020-2022 PI: J. Near, D. Darais)*

## **Research Assistant, C. Vincent (Vermont)**

**2021-present**

*Fully Homomorphic Encryption, ZK Proofs, Applied Cryptography Research*

## **Microsoft, Applied Scientist PhD Intern, Summer 2021 (Redmond: remote)**

**2021**

*COSinE Mgmt DI R&D, Azure E+P Enterprise and Security DI*

*Confidential Project: Wrote Proposal, created Prototype and presented results*

*Mentored by P. Angulo, PhD.*

## **Microsoft Research, Independent Contractor, Summer 2021 (New York: remote)**

**2021**

*Reinforcement Learning Open Source Fest participant (1 of 12)*

*Vowpalwabbit, Integrate Estimator library into Azure Machine Learning (AML)*

*Mentored by C. Tan and A. Taymanov*

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

**2020**

*Research Intern for Forge Team, Differential Privacy project*

## **Graduate Writing Consultant, Fall 2020 (Vermont)**

**2020-2021**

*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)*

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## RELEVANT WORK EXPERIENCE

<b>Mercury Banking (Haskell fintech)</b> : Software Engineering Intern (San Francisco)	2019
<b>Apple, Inc.:</b> Software Engineering Intern (Sunnyvale)	2019
<b>Google Summer of Code:</b> Developer for Haskell.org (remote)	2018
<b>Mozilla:</b> Increasing Rust's Reach Developer (remote)	2018

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## Peer-Reviewed Workshop Publications:

- ❖ "Continual Audit of Individual and Group Fairness in Deployed Classifiers via Prediction Sensitivity", (**Under Submission Review**) (**Maughan, K.** , Ngong, I., and Near, J.) 2020
  - ❖ "Towards a Measure of Individual Fairness for Deep Learning" (**Maughan, K.** and Near, J.) - presented as poster for **MD4SG 2020** 2020
  - ❖ "Towards Auditability for Fairness in Deep Learning" (Ngong, I., **Maughan, K.** and Near, J.)- presented as poster for **AFCI at NeurIPS** 2020
  - ❖ "Archipelago Pensée" (**Maughan, K.**) - presented as a poster: **RAIS at NeurIPS** 2020
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## INVITED RESEARCH POSTER PRESENTATIONS

- ❖ "Towards Auditability of Individual Fairness for Deep Learning" Nordic Probabilistic Artificial Intelligence School 2021 (Prob AI) 2021
- ❖ "Towards a Measure of Individual Fairness for Deep Learning" (**first author**) Mediterranean Machine Learning Summer School (M2L) (Winter cohort) 2021
- ❖ Poster Presentation, 4th **MD4SGD 2020** Annual Proceedings "Towards a Measure of Individual Fairness for Deep Learning" (**first author**) 2020
- ❖ Poster Presentation, Carnegie Mellon's (CMU) **AI for Social Good Symposium** "Examining Implicit Bias in Police Data: Lessons Learned about Reproducibility And Transparency in AI" 2020
- ❖ "Towards Auditability for Fairness in Deep Learning" (Ngong, I., **Maughan, K.** and Near, J.)- presented as poster for **AFCI at NeurIPS** (Algorithmic Fairness through the lens of Causality and Interpretability) 2020
- ❖ Poster Presentation for **RAIS at NeurIPS** (1st Resistance AI Workshop Proceedings,) "Archipelago Pensée" (**first author**) 2020

## INVITED RESEARCH TALKS

- ❖ "Towards Audit-ability in Individual Fairness for Deep Learning" ; Career Mentoring Workshop: Grad Cohort for Women (1 of 30) 2021
- ❖ "Towards a Measure of Individual Fairness for Deep Learning" ; Jane Street PhD Symposium 2021
- ❖ "Towards a Measure of Individual Fairness for Deep Learning" ; Amazon Science internal presentation (with advisor Dr. J. Near) 2021
- ❖ "Creating an end to end participatory data survey pipeline with variable constraints" (Data Economies and Governance MD4SG working group) 2020
- ❖ "Towards a Measure of Individual Fairness for Deep Learning" ; Short Presentation given for UVM/CS++ Research Day (20 min talk) 2020
- ❖ "Personalized Robotic Control using MISL" for UVM/CS++ Research Day (20 min talk) 2019

## RESEARCH AWARDS

- ❖ Outstanding Poster Award for Brilliant Idea Category, "Towards a Measure of Auditability in Fairness for Deep Learning", Mediterranean Machine Learning Summer School (2021)

## OTHER PRESENTATIONS

- ❖ Brown University [SUMS](#), Maths and Illusion: exhibited a fractal-inspired pop-up book (2021)

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## MERIT-BASED MENTORSHIPS / RESEARCH MENTORSHIPS

Mentee, Google's CS Research Mentorship Program (CSRMP) with A. Lees, PhD	2021
Mentee, AiC Connectors Program with Facebook with O. Dalleleau, PhD	2021
Mentee, She256 Blockchain Group with P. Mishra	2021
Mentee, Global Outreach Mentorship with S. Gupta, PhD (EC 2020)	2020
Mentee, LatinX in AI Research Workshop Mentorship with J. Barajas, PhD (ICML 2020)	2020
Mentee, Mentored by Amal Ahmed, PhD (ICFP 2020)	2020
Mentee, Lighthouse3 AI Ethics Mentoring Externship with F. McEvoy (1 of 20 chosen)	2020
Mentee, Code2040 Fellowship with Ben Waber, PhD	2020

## MERIT-BASED GRANTS / SCHOLARSHIPS

Kernel Fellowship Block III via Gitcoin (Security: Zero Knowledge Proofs project)	2021
Gitcoin Scholarship for Women (for Kernel Fellowship Block III)	2021
She256 Mentorship focused on ZK Snarks (6 months)	2021
USENIX Security Conference 2021 (via USENIX Diversity Grant via GREPSEC V)	2021
TechX Social Impact / Harvard Franklin Fellowship (1 of 12)	2020
USENIX Enigma Grant	2021
Nominee, Microsoft Ada Lovelace Fellowship (1 of 2)	2020
Participant, Algorithmic Game Theory Mentoring Workshop (AMW) (co-located with EC 2020)	2020
WiML ICML Travel Funding Grant (sponsor QuantumBlack)	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	2021
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
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

IEEE Symposium on Security and Privacy (student travel grant, complimentary ticket)	2021
4th Annual ZK-Proof Workshop (complimentary ticket)	2021

## **OTHER GRANTS/ FELLOWSHIPS**

WISP Privacy+Security Conference	2021
- EU Data Law / De-Identification Workshop (Scholarship via WISP)	
Grace Hopper Conference	2020
NCWIT/Bloomberg GHC Conference Grant	2020
Women of Color in Technology Complimentary Registration	
Financial Aid Grant, SciPy (Scientific Computing with Python)	2020
MSRI SACNAS Grant	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 registration: remote)	2021
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
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
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	
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

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## **ACADEMIC REVIEWER**

Reviewer, Springer AI and Ethics Journal	2020 - present
Reviewer, BlackAIR Summer Research Grant Program	2021
Reviewer, ICLR Distributed and Private Machine Learning workshop	2021
Committee Reviewer, HCI Track, GHC (Grace Hopper Conference)	2021
Reviewer, PML4DC (Practical ML for Developing Countries) workshop, ICLR	2021
Reviewer, Tapia Conference (Panels and Workshops)	2021
Reviewer for AFCI workshop at NeurIPS (Fairness and Accountability)	2020
Reviewer for Black in AI at NeurIPS workshop	2020

## **ACADEMIC REVIEWER**

<i>Reviewer and Programme Committee Member, LXAI@ICML Workshop</i>	2020
<i>Committee Reviewer, HCI Track, GHC (Grace Hopper Conference)</i>	2020
<i>Chair Reviewer, PML4DC (Practical ML for Developing Countries) workshop, ICLR</i>	2020
<i>Reviewer, Tapia Conference (Panels and Workshops)</i>	2020
<i>Reviewer, Travel Grant Applications, Black in AI for AAAI</i>	2020

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## **ACADEMIC SERVICE (AI/Machine Learning)**

<i>Co-chair, ICLR Diversity, Equity and Inclusion</i>	2022
<i>Privacy Enhancing Technologies Symposium, Student Co-Organizer</i>	2021
<i>Black in AI Logistics Co-Chair (NeurIPS)</i>	2020
<i>WiML Senior Program and Mentorship Co-Chair, WiML (NeurIPS)</i>	2020
<i>Committee Member, Zoom Infrastructure, EMNLP</i>	2020
<i>Session Facilitator, ICML 2020 for "Recommender System Research in Industry" (1 of 2)</i>	2020
<i>Volunteer ACL (Association of Computational Linguistics)</i>	2020
<i>Co-organizer, ACL (Association of Computational Linguistics) Black in AI Socials</i>	2020
<i>Volunteer, ICML 2020 (International Conference on Machine Learning)</i>	2020
<i>Volunteer, EC'20 (Economics and Computation)</i>	2020
<i>Volunteer, ICLR (International Conference on Learning Representations)</i>	2020
<i>Member, MD4SG (Mechanism Design for Social Good); Education working group</i>	2020
<i>Member, MD4SG Data and Governance working group</i>	2020
<i>Chair, AAAI Black in AI Annual Lunch</i>	2020
<i>Panelist, AAAI Try AI Workshop</i>	2020
<i>Invited Panelist, CRAFT workshop, FAT* conference (declined offer)</i>	2020

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## **ACADEMIC JOURNALS (AI/Machine Learning)**

<i>Board Member, AI and Ethics, Springer</i>	2020
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## **ACADEMIC SERVICE (Other)**

<i>Panelist, PhD recruiting event (included multiple schools, sponsored by CodePath)</i>	2020
<i>Student Volunteer, ICFP (International Conference Functional Programming)</i>	2020
<i>Student volunteer, ICFP (International Conference Functional Programming)</i>	2018
<i>Student volunteer, PLDI (Programming Languages Design and Implementation)</i>	2018
<i>Student volunteer, POPL (Principles of Programming Languages)</i>	2018
<i>Student volunteer, SPLASH</i>	2018
<i>(Systems, Programming, Languages, and Applications) (declined offer)</i>	

## **ACADEMIC ASSOCIATION FOR COMPUTING MACHINERY (ACM) MEMBERSHIPS**

<i>SIGecom Special Interest Group on Economics and Computation</i>	2020-present
<i>Student Member, International Association of Cryptologic Research (IACR)</i>	2020-present

## **NON-ACADEMIC SERVICE**

<i>Invited Judge, Technovation, AI for Good</i>	2021
<i>Participant, Git Contributors Inclusion Summit</i>	2020
<i>Reviewer, Code2040 Application Essays</i>	2020
<i>Reviewer, OpenMined Differential Privacy articles</i>	2020

## NON-ACADEMIC SERVICE

Judge, DataKind, Data.org, Inclusive Growth and Recovery Challenge	2020
Google Developer Student Club Lead (for University of Vermont)	2019
Reviewer, Travel Grant Applications, Clojure Conj (2 rounds)	2017

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## GRANT WRITING / PROPOSALS

CDS&E Computational and Data-Enabled Science and Engineering	2020
Database Grant Proposal for SageMaths (as Key Personnel) (PI Ben Hutz, PhD)	

## WRITING / PUBLICATIONS / POSTS

Contributor, <a href="#">Wikipedia: WikiProject Women in Red/AI Ethics</a>	2020
Tech X Social Impact " <a href="#">Impossible Markets and Big Dreams</a> : My interaction with the COO of Impossible Foods"	2020
Tech X Social Impact " <a href="#">Ready! Start: Exploring the Virtual Healthcare Multiverse</a> "	2020
Google Summer of Code " <a href="#">Breaking the Time-Space Barrier with Haskell</a> "	2018

## RESEARCH PhD INVITATIONS

Participant, <a href="#">GREPSEC V</a> :	2021
- (Graduate Students in Privacy and Security Early Career Workshop)	
Participant, Nordic Probabilistic Artificial Intelligence School 2021: <a href="#">ProbAI</a>	2021
- 1 of 60 scholarship recipients (27%)	
Participant, Doctoral Consortium, <a href="#">ACM FAccT</a> :	2021
(ACM Conference on Fairness, Accountability and Transparency)	
Participant, CRAFT workshop at ACM FAccT	2021
- Inspecting algorithms ins social media platforms	
- Rethinking Demographic Data Infrastructures for Algorithmic Fairness	
Participant, CHImE <a href="#">CHI</a> Mentoring Workshop Symposium	2021
Participant, Mediterranean Machine Learning Summer School ( <a href="#">M2L</a> ) (Winter cohort)	2021
Participant, Isogeny-Based Cryptography Winter School	2021
Participant, Summer Institute in Computational Social Science ( <a href="#">SICSS</a> )	2021
Howard-Mathematica (declined offer)	
Participant, Winter Institute in Computational Social Science ( <a href="#">WICSS</a> )	2021
Invited Participant, "Key themes for informing a Research Roadmap", The Alan Turing Institute	2021
Invited Participant, "Threats and Opportunities for AI in Cybersecurity"	2021
Invited Participant, "Society-centric approaches to AI challenges in Cybersecurity", The Alan Turing Institute	2021
Invited Participant, "Environmental Enables for AI challenges in Cybersecurity", The Alan Turing Institute	2021
Participant, Self Organizing Conference on Machine Learning ( <a href="#">SOCML</a> )	2021
- Machine Learning, and Privacy session, Moderated by U. Erlingsson	2021
- organized by I. Goodfellow (1 of 9 chosen)	
Simons Institute, Innovations in Theoretical Computer Science ( <a href="#">ITCS</a> )	2021

## INDUSTRY PhD INVITATIONS

Participant, Facebook, Amplified: Above & Beyond Computer Science Program (PhDs)	2021
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## **INDUSTRY PhD INVITATIONS**

Participant (via CSRMP), Google PhD Fellowship Summit	2021
Participant, Jane Street PhD Symposium (New York, remote)	2021
Participant, JP Morgan, Advancing Black Pathways in Data Science	2021
Participant, TwoSigma Mock Interview Day for Early Career Women in STEM	2021
Participant, Adobe, "The Future of Creativity" (Virtual)	2020
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**

Featured in the "Black Girls CODE the Future" Coloring Book	2021
NCWIT, chosen (1 of 2) to Congratulate Dr. Gladys West for Pioneer Award (virtual)	2021
MacArthur Foundation profile on Black in AI organization's Impact	2021
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

## **INDUSTRY TALKS**

Invited Panelist, Springer AI and Ethics Board for The Algol Conference	2021
Invited Panelist, Technovation AI Prize	2021
Featured by Coursera (Learner Story)	2017
Speaker, EGG on Air Conference (human-centred AI)	2020
Speaker, EGG at Morgan State (talk on Human-centred AI and research)	2020
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, The Data Standard	2020
Interviewed for OpenMined course (Privacy-Preserving Machine Learning and Fairness)	2020
Interviewed for YouTube Series, Tech Girl Thursdays	2020
Interviewed for Podcast, Women of Silicon Valley	2020
Invited Panelist, Career Girls AI Virtual Camp	2020-2021
Invited Speaker, Autodesk Design (Boston Office) on Differential Privacy	2020
Interviewed for Podcast on Black in AI (1 of 2 persons), iPhone Life Interview	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
Featured Session Clip, End of Year 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
Wendy's Subway, Invited Guest, Audiobook, "Turn Illness into a Weapon"	2021

## **OTHER (NON-INDUSTRY) TALKS**

University of Vermont, CIS196, Privacy Law Research Talk	2021
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## **OTHER (NON-INDUSTRY) TALKS**

<i>BlackAIR Research Grant speaker</i>	2021
<i>MIT Hacking Racism in Healthcare Challenge (keynote speaker)</i>	2020
<i>PLAID Lab speaker, "What Scientists can learn from Artists"</i>	2020
<i>PLAID Lab Speaker, "Information Theory: from Spacecraft to Blockchain"</i>	2021
<i>CS Crew Project talk : contributing to Maths software (CodeWorld, SageMaths)</i>	2019
<i>CS Crew GSoC talk (40-minute talk about Google Summer of Code and Internships)</i>	2019
<i>University of Vermont, CS293 Technical Interviewing Workshop Talk</i>	2019

## **CLASSES (PhD)**

<i>Doctoral Research with advisor Joe Near</i>	2021-present
<i>Information Theory, taught by Jeff Frolik (Fall)</i>	2021
<i>Abstract Algebra I taught by Puck Rombach (Fall)</i>	2021
<i>Privacy, Law and Policy, taught by Ryan Kriger (Spring)</i>	2021
<i>(Post-quantum) Cryptography, taught by Christelle Vincent (Spring)</i>	2021
<i>Secure Distributed Computation; taught by Joe Near using Python (Fall)</i>	2020
<i>Machine Learning; taught by Safwan Wshah using Python (Spring)</i>	2020
<i>Doctoral Research with advisors Joe Near and David Darais (Spring, Fall)</i>	2019-2020
<i>Data Privacy; taught by Joe Near using Python (Fall)</i>	2019
<i>Software Verification; taught by David Darais using Agda (Fall)</i>	2019
<i>Computer Human Interaction; taught by Josh Bongard (Fall)</i>	2019

## **EXCHANGE CLASSES (PhD)**

<i>Probabilistic Artificial Intelligence DT8122</i>	2021
<i>Norwegian University of Science and Technology (Virtual)</i>	

## **CLASSES (AUDIT)**

<i>Stanford EE 374 : Internet-Scale Consensus in the Blockchain Era</i>	2021
- Taught by Dr. David Tse through Stanford University	
- Audited class, scribed for Lecture 11, Spring 2021	

## **CLASSES (RELATED)**

<i>Participant (1 of 18), "Dark Matters", School for Poetic Computation</i>	2020
<i>(taught by American Artist : workshop on Surveillance, data, ethics, history of Silicon Valley; guests included Dr. Simone Browne, Stephanie Dinkins and Rashida Richardson)</i>	
<i>Stanford ICME Summer NLP in Deep Learning Workshop</i>	2020
<i>Participant, IBM Qiskit Global Quantum Computing Summer School</i>	2020
<i>Participant, PL+HCI Swimmer Summer School</i>	2020
<i>(Programming Languages + Human Computer Interaction)</i>	
<i>Participant, MSRI, Decidability, Definability and Computability in Number Theory</i>	2020
<i>DeepLearning.ai</i>	2020-2021
- Neural Networks and Deep Learning	
- Improving Deep Neural Networks: Hyperparameter Regularization and Optimization	
- Structuring Machine Learning Projects	
- Natural Language Processing Specialization	
- Cryptography I	



## **CLASSES (RELATED)**

*DeepLearning.ai* 2020-2021

- *Cryptography : Boolean Functions, S-boxes and Related Problems*

*Hyperlink Academy* 2020-2021

- *Design Neighborhood Scale Software (Ostromian economics and computing)*
- *Digital Alchemy (digital file formats, data manipulation)*
- *Artificial World Building (genetic algorithms, reinforcement learning, cellular automata)*
- *Esoteric Programming Language Theory (Graphical to Impossible programming languages)*
- *Language Construction Workshop (Conlang: Linguistics / made a language) (C. Gorrie)*

*Hyperlink Academy* 2020-2021

- *The Book is a Program 0 (Publishing a book in Racket) (J. Dueck)*
- *GUIs through Art History 0 (Recreating Periods of Art in History using GUIs) (E. Lin)*

*InterAccess*

- *Parametric Thinking with Images (Grasshopper3D)* 2020
- *Generating Images with Shaders (GLSL)*

## **WORKSHOPS (RELATED)**

*R Orange County Book Club (6 weeks Mastering Spark with R)* 2021

- *Presented Chapters 10 and 11 (Distributed R, Extensions in Spark using R)*

*R Orange County Book Club (6 weeks Text Mining with R)*

- *Presented Chapter 7 (Twitter data Case Study in Text Mining with R)*
- *Presented R code exercises relevant to assigned chapters*

*R Orange County Workshops* 2021

- *Modeling Normally Distributed Data with Repeated Measures (February)*
- *Transforming Data into Dashboards with Tableau (March)*
- *R Virtual Science Hackathon (April) (project-based)*

*R Nimble virtual short course (C. Paciorek)* 2021

- *Basic concepts on converting BUGS and JAGS models*
- *MCMC sampling, model components for Bayesian non-parametric distributions*

*University of Vanderbilt Regression Modeling Strategies Short Course* 2021

- *Four day course on regression modeling and causal models*
- *Linear models, logistic and ordinal regression (F. Harrell, Jr., PhD, D. Levy, PhD)*

*Brown University Applied Mathematics* 2021

- *Contributed Artwork to SUMS on Mathematics and Illusion*
- *(SUMS: Symposium for Undergraduates in Mathematical Sciences)*

*Gray Area Festival Workshops* 2020

- *Conceptual Cartography with Mapbox*
- *Data Visualization: Theory to Practice*

## **CLASSES (RELATED)**

Pioneer Works 2020

- Data Visualization as Activism (S. Lavigne)
- Feminist Data Set (with C. Sinderson)
- AI + Creativity (A. Miller, D. Geers and A. Dorsen)

### *FutureLearn*

- "Empire: The Controversies of British Imperialism" 2020
- The Laws of Digital Data, Content and Artificial Intelligence 2020
- "Functional Programming in Haskell" 2017

### *Wendy's Subway*

- Rea Tajiri's workshop on Archival Practices - Speculative Imaginings 2021
- Reading workshop with Che Gossett on Abolitionist Insurgencies 2020  
(led by C. Gossett, with lecture guest F. Moten, contributed to published Zine)
- Unsettling Historical Common Sense

## **D&I (Diversity and Inclusion) Invitations (Academic Conferences):**

KDD 2020 D&I Grant (free registration) 2020

ECCV 2020 (free registration courtesy Google Research) 2020

## **HACKATHONS**

R Data Hackathon 2021, First Place, "Cast and Gender Roles in Movie Data" 2021

- Our group won First place at the R Data Hackathon 2021 for Best Visualization
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## **Developer Conference Grant/ Scholarship Invitations (Non-Academic Conferences):**

AppSec (LA) 2019, TechTogetherBoston 2020, Twilio's Signal Conf 2019, Curry On! 2019, RustConf 2018, EARL Seattle 2018 (declined offer), 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

## **NON-ACADEMIC MEMBERSHIP**

Community Board, Black In AI 2020-present

Member, Women in Number Theory 2018-present

Member, She256 2021-present