

# 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, 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, PLAID Lab (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, Applied Cryptography Research

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

Azure E+P Enterprise and Security DI, mentored by Dr. P. Angulo

**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)

Advanced Web Design (taught by Bob Erickson)

Programming with Matlab (taught by Radhakrishna Dasari)

Data Privacy with Jupyter, Python (taught by Joe Near)

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## RELEVANT WORK EXPERIENCE

**Mercury Banking (Haskell fintech) : Software Engineering Intern (San Francisco)** **2019**

**Apple, Inc.: Software Engineering Intern (Sunnyvale)** **2019**

## RELEVANT WORK EXPERIENCE

<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:

- ❖ "Towards a Measure of Individual Fairness for Deep Learning" 2020  
(**Maughan, K.** and Near, J.) - presented as poster for **MD4SG 2020**
  - ❖ "Towards Audibility for Fairness in Deep Learning" 2020  
(Ngong, I., **Maughan, K.** and Near, J.)- presented as poster for **AFCI at NeurIPS**
  - ❖ "Archipelago Penseé" (**Maughan, K.**) 2020  
- presented as a poster: **RAIS at NeurIPS**
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### INVITED RESEARCH POSTER PRESENTATIONS

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

### INVITED RESEARCH TALKS

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

### 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 Dr. A. Lees	2021
Mentee, AiC Connectors Program with Facebook with Dr. O. Dalleleau	2021
Mentee, Global Outreach Mentorship with Dr. S. Gupta (EC 2020)	2020
Mentee, LatinX in AI Research Workshop Mentorship with Dr. J. Barajas (ICML 2020)	2020
Mentee, Mentored by Dr. Amal Ahmed, (ICFP 2020)	2020
Mentee, Lighthouse3 AI Ethics Mentoring Externship with F. McEvoy (1 of 20 chosen)	2020
Mentee, Code2040 Fellowship with Dr. Ben Waber	2020

## **MERIT-BASED GRANTS / SCHOLARSHIPS**

Kernel Fellowship Block III via Gitcoin (Security and Grassroots Economics Daos)	2021
Gitcoin Scholarship for Women (for Kernel Fellowship Block III)	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
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)	

**OTHER GRANTS/ FELLOWSHIPS**

<i>ICERM (Brown University) Variable Precision in Mathematical &amp; Scientific Thinking</i>	2020
<i>RWC2020 (Real World Crypto: registration, flight, lodging) Grant via IACR</i>	2020
<i>CRA-WP Grad Cohort for Women (covers registration: remote)</i>	2021
<i>CRA-WP Grad Cohort for Women (covers flight, registration, lodging)</i>	2019
<i>CRA-WP Grad Cohort for Underrepresented Minorities (flight, registration, lodging)</i>	2019
<i>Neurips Conference Travel Grant (includes free registration)</i>	2019
<i>Sage-Days-104 : To work on SageMath Software: Arithmetic Dynamics</i>	2019
<i>Simons Institute (Berkeley) Error-Correcting Codes and High-Dimensional Expansion Boot Camp (attendee)</i>	2019
<i>ICERM (Brown University) Encrypted Search Workshop Grant (Lodging provided)</i>	2019
<i>Cornell Number Theory Conference Grant (Lodging provided)</i>	2019
<i>NASA L'Space NPWEE Concept Proposal writing programme participant</i>	2019
<i>NASA L'Space Proposal/Review Academy (patentable research proposal for funding)</i>	2019
<i>NASA L'Space Academy (virtual team &amp; mentorship with NASA scientists Level 1)</i>	2019
<i>MSRI (Mathematical Sciences Research Institute) Grants to attend:</i>	
<i>Optimal Transport and applications to machine learning and statistics</i>	2020
<i>Connections for Women:</i>	2019
- <i>Derived Algebraic Geometry, Birational Geometry and Moduli Spaces workshop</i>	
- <i>Introductory Workshop: Derived Algebraic Geometry and Birational Geometry And Moduli Spaces</i>	
<i>Racket Summer School (National Science Foundation Grant)</i>	2018-2019
<i>PLMW (Programming Languages Mentorship Workshop)</i>	2018
<i>ICFP (International Conference Functional Programming)</i>	
<i>PLMW(Programming Languages Mentorship Workshop)</i>	2018
<i>PLDI (Programming Languages Design and Implementation)</i>	
<i>OPLSS (Oregon Programming Languages Summer School Grant) - declined offer</i>	2018

**ACADEMIC REVIEWER**

<i>Reviewer, Springer AI and Ethics Journal</i>	2020 - present
<i>Reviewer, BlackAIR Summer Research Grant Program</i>	2021
<i>Reviewer, ICLR Distributed and Private Machine Learning workshop</i>	2021
<i>Committee Reviewer, HCI Track, GHC (Grace Hopper Conference)</i>	2021
<i>Reviewer, PML4DC (Practical ML for Developing Countries) workshop, ICLR</i>	2021
<i>Reviewer, Tapia Conference (Panels and Workshops)</i>	2021
<i>Reviewer for AFCI workshop at NeurIPS (Fairness and Accountability)</i>	2020
<i>Reviewer for Black in AI at NeurIPS workshop</i>	2020
<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
<i>Reviewer, Travel Grant Applications, Clojure Conj (2 rounds)</i>	2017

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

<i>Co-chair, ICLR Diversity, Equity and Inclusion</i>	2022
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**ACADEMIC SERVICE (AI/Machine Learning)**

<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

**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
<i>Judge, DataKind, Data.org, Inclusive Growth and Recovery Challenge</i>	2020
<i>Google Developer Student Club Lead (for University of Vermont)</i>	2019

**GRANT WRITING / PROPOSALS**

<i>CDS&amp;E Computational and Data-Enabled Science and Engineering</i>	2020
<i>Database Grant Proposal for SageMaths (as Key Personnel) (PI Ben Hutz)</i>	

## 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, Nordic Probabilistic Artificial Intelligence School 2021: <a href="#">ProbAI</a>	2021
Participant, Doctoral Consortium, <a href="#">ACM FAccT</a> : (ACM Conference on Fairness, Accountability and Transparency)	2021
Participant, CRAFT workshop at ACM FAccT	2021
<ul style="list-style-type: none"><li>- Inspecting algorithms ins social media platforms</li><li>- Rethinking Demographic Data Infrastructures for Algorithmic Fairness</li></ul>	
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, “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
<ul style="list-style-type: none"><li>- Machine Learning, and Privacy session, Moderated by U. Erlingsson</li><li>- organized by I. Goodfellow (1 of 9 chosen)</li></ul>	2021
Simons Institute, Innovations in Theoretical Computer Science ( <a href="#">ITCS</a> )	2021

## INDUSTRY PhD INVITATIONS

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
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

<i>Invited Panelist, Springer AI and Ethics Board for The Algol Conference</i>	2021
<i>Featured by Coursera (Learner Story)</i>	2017
<i>Speaker, EGG on Air Conference (human-centred AI)</i>	2020
<i>Speaker, EGG at Morgan State (talk on Human-centred AI and research)</i>	2020
<i>Presenter, VentureBeat's Transform 2020 Wrap-up for panel on Ethics and AI</i>	2020
<i>Moderator, VentureBeat's Transform 2020 panel on Ethics and AI</i>	2020
<i>Interviewed for Podcast, The Data Standard</i>	2020
<i>Interviewed for OpenMined course (Privacy-Preserving Machine Learning and Fairness)</i>	2020
<i>Interviewed for YouTube Series, Tech Girl Thursdays</i>	2020
<i>Interviewed for Podcast, Women of Silicon Valley</i>	2020
<i>Invited Panelist, Career Girls AI Virtual Camp</i>	2020
<i>Invited Speaker, Autodesk Design (Boston Office) on Differential Privacy</i>	2020
<i>Interviewed for Podcast on Black in AI (1 of 2 persons), iPhone Life Interview</i>	2020
<i>Invited Speaker, Sister to Sister International, Inc (STSI) on AI, Privacy, Ethics</i>	2020
<i>Invited Panelist, Morehouse@Momentum Coding School, "The Data Don't Lie"</i>	2020
<i>Invited Guest, Corecursive Podcast (Technical Podcast)</i>	2020
<i>Featured Session Clip, End of Year Corecursive Podcast (Technical Podcast)</i>	2020
<i>Women in Data Science talk "Why conferences matter" (40 min NeurIPS inspired talk)</i>	2020
<i>"Magic Gnomes: A GHC Compiler talk (5-minute talk at Github for Sentry's Show &amp; Tell)</i>	2019
<i>"Denotational Semantics" (2 minute Lightning Talk for Meetup group)</i>	2018
<i>"Recap of Google I/O 2018" (20 minute presentation at Google Developer Group LA)</i>	2018
<i>Wendy's Subway, Invited Guest, Audiobook, "Turn Illness into a Weapon"</i>	2021

## OTHER (NON-INDUSTRY) TALKS

<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>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>Software Verification; taught by David Darais using Agda (Fall)</i>	2019
<i>Data Privacy; taught by Joe Near using Python (Fall)</i>	2019
<i>Computer Human Interaction; taught by Josh Bongard (Fall)</i>	2019

## **CLASSES (AUDIT)**

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

## **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)
- Stanford ICME Summer NLP in Deep Learning Workshop* 2020
- Participant, IBM Qiskit Global Quantum Computing Summer School* 2020
- Participant, PL+HCI Swimmer Summer School* 2020  
(Programming Languages + Human Computer Interaction)
- Participant, MSRI, Decidability, Definability and Computability in Number Theory* 2020

- DeepLearning.ai* 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
  - 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)
  - 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)

- R Orange County Book Club (6 weeks Mastering Spark with R)* 2021
- R Orange County Book Club (6 weeks Text Mining with R)*
- Presented Chapters 10 and 11 (Distributed R, Extensions in Spark using 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)



## **ONLINE LEARNING (SELECTED)**

*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

*Pioneer Works* 2020

- Data Visualization as Activism (S. Lavigne)
- Feminist Data Set (with C. Sindors)
- 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

## **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*