

Krystal Maughan

Krystal.maughan@gmail.com

Github: <https://github.com/kammitama5>

Tel: 607.342. 6970

Blog: <https://kammitama5.github.io/>

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

University of Vermont, PhD candidate **2019-present**
Applied Cryptography, ZK Proofs, Differential Privacy, Provable Fairness, Machine Learning

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

Research Assistant, C. Vincent (Vermont) **2021-present**
ZK Proofs, Elliptic Curves, Number Theory & Applied Cryptography Research

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)*

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 Research 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, Renyi-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)*

RELEVANT WORK EXPERIENCE

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

RELEVANT WORK EXPERIENCE

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

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.) 2021
 - ❖ "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 Penseé" (**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 Penseé" (**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)

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, Women in Privacy and Security (WISP), D. Sharma	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

WISP & Black Hat USA Briefings Scholarship	2021
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

<i>IEEE Symposium on Security and Privacy (student travel grant, complimentary ticket)</i>	2021
<i>4th Annual ZK-Proof Workshop (complimentary ticket)</i>	2021
<i>WISP Privacy+Security Conference</i>	2021
- <i>EU Data Law / De-Identification Workshop (Scholarship via WISP)</i>	
<i>Grace Hopper Conference</i>	2020
<i>NCWIT/Bloomberg GHC Conference Grant</i>	2020
<i>Women of Color in Technology Complimentary Registration</i>	
<i>Financial Aid Grant, SciPy (Scientific Computing with Python)</i>	2020
<i>MSRI SACNAS Grant</i>	2020
<i>LXAI+BAI@GTC Nvidia Digital DLI Workshop Scholarship Award for DLI workshop</i>	2020
<i>"Applications of AI for Anomaly Detection [LDLIW2249] (Deep Learning Institute at GTC)</i>	
<i>ICERM (Brown University) Variable Precision in Mathematical & 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 & 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

ACADEMIC REVIEWER

<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

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

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 Finalist Judge, Technovation, AI for Good</i>	2021
<i>Participant, Git Contributors Inclusion Summit</i>	2020

NON-ACADEMIC SERVICE

Reviewer, Code2040 Application Essays	2020
Reviewer, OpenMined Differential Privacy articles	2020
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

GRANT WRITING / PROPOSALS

❖ Microsoft Research, Reinforcement Learning Open Source Festival Proposal (Awarded \$10,000)	2021
❖ CDS&E Computational and Data-Enabled Science and Engineering Database Grant Proposal for SageMaths (as Key Personnel) (PI Ben Hutz, PhD)	2020
❖ Google Summer of Code, Proposal to Haskell.org (Awarded \$6,000)	2018
❖ Helium Grant, (for exploring questions on the edge of mainstream thinking) (Awarded \$1000)	2018

WRITING / PUBLICATIONS / POSTS

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

RESEARCH PhD INVITATIONS

Participant, GREPSEC V :	2021
- (Graduate Students in Privacy and Security Early Career Workshop)	
Participant, Nordic Probabilistic Artificial Intelligence School 2021: ProbAI	2021
- 1 of 60 scholarship recipients (27%)	
Participant, Doctoral Consortium, ACM FAccT :	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 CHI Mentoring Workshop Symposium	2021
Participant, Mediterranean Machine Learning Summer School (M2L) (Winter cohort)	2021
Participant, Isogeny-Based Cryptography Winter School	2021
Participant, Post-Quantum Networks Workshop	2021
Participant, Summer Institute in Computational Social Science (SICSS)	2021
Howard-Mathematica (declined offer)	
Participant, Winter Institute in Computational Social Science (WICSS)	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	2021
- Invited Participant, "Environmental Enables for AI challenges in	2021

RESEARCH PhD INVITATIONS

Participant, Self Organizing Conference on Machine Learning (SOCML)	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 (ITCS)	2021

INDUSTRY PhD INVITATIONS

Participant, Facebook, Amplified: Above & Beyond Computer Science Program (PhDs)	2021
Participant, Galois 1st Summer School on Trustworthy Machine Learning (1 of 35)	2021
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

Student Presenter for Microsoft Research's Reinforcement Learning Open Source Fest	2021
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

INDUSTRY TALKS

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

Invited Panelist, Peer-connected Undergraduate Research Exploration in Computer and Information Science and Engineering (PRE.CISE)	2021
University of Vermont, CIS196, Privacy Law Research Talk	2021
BlackAIR Research Grant speaker	2021
MIT Hacking Racism in Healthcare Challenge (keynote speaker)	2020
PLAID Lab speaker, "What Scientists can learn from Artists"	2020
PLAID Lab Speaker, "Information Theory: from Spacecraft to Blockchain"	2021
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
University of Vermont, CS293 Technical Interviewing Workshop Talk	2019

CLASSES (PhD)

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

EXCHANGE CLASSES (PhD)

Probabilistic Artificial Intelligence DT8122	2021
Norwegian University of Science and Technology (Virtual)	

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	
University of Vermont: CS124, Algorithms, taught by J. Hibbeler	2021

CLASSES (RELATED)

Rewriting the Code (RTC) Blockchain Basics + Developer Workshop	2021
The Initiative for CryptoCurrencies and Contracts	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 2020-2021
- Cryptography : Boolean Functions, S-boxes and Related Problems 2020-2021

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 distribution

WORKSHOPS (RELATED)

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. 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
-

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

Member, Women in Security and Privacy (WISP)

2020-present