

# Krystal Maughan

Krystal.maughan@gmail.com

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

Tel: 607.342. 6970

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

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Research Interests: Supersingular Isogeny Cryptography, Trustworthy AI

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<b>University of Vermont, PhD candidate</b>	<b>2019-present</b>
Supersingular Isogeny Cryptography, Trustworthy AI	

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## Peer-Reviewed Workshop Publications:

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| ❖ “Attribute Differential Privacy” ( <b>Pre-print available upon request</b> )        | 2021 |
| (Maughan, K. and Near, J.)  |      |
| ❖ “Towards a Measure of Individual Fairness for Deep Learning”                        | 2020 |
| (Maughan, K. and Near, J.) - presented as poster for <b>MD4SG 2020</b>                |      |
| ❖ “Towards Audibility for Fairness in Deep Learning”                                  | 2020 |
| (Ngong, I., Maughan, K. and Near, J.)- presented as poster for <b>AFCI at NeurIPS</b> |      |
| ❖ “Archipelago Pensée” (Maughan, K.)  | 2020 |
| - presented artwork and writing as a poster: <b>RAIS (Resistance AI) at NeurIPS</b>   |      |

## RESEARCH EXPERIENCE:

<b>Research Assistant (Vermont)</b>	<b>2021-2024</b>
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Supervisors: Joe Near, Christelle Vincent: Research on Isogeny Graph Cryptography, VDFs, Elliptic Curves

<b>Research Assistant (Vermont)</b>	<b>2019-2021</b>
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Supervisor: Joe Near: Research on Provable Fairness and Privacy

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

<b>Microsoft, PhD Intern, Summer 2021 (Redmond: remote)</b>	<b>2021</b>
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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.

<b>Microsoft Research, Independent Contractor, Summer 2021 (New York: remote)</b>	<b>2021</b>
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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

<b>PhD Intern, Autodesk Summer 2020 (Pier 9, San Francisco: remote)</b>	<b>2020</b>
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Research Intern for Forge Team, Renyi-Differential Privacy project

<b>Graduate Writing Consultant, Fall 2020 (Vermont)</b>	<b>2020-2021</b>
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Writing Mentor and Consultant for graduate students

Technical Writing Consultant for fields as broad as Materials Science to History

<b>Teacher's Assistant, Fall/Spring 2019-2020 (Vermont)</b>	<b>2019-2020</b>
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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#### INVITED RESEARCH POSTER PRESENTATIONS

- ❖ "Towards Auditability of Individual Fairness for Deep Learning" 2021  
Nordic Probabilistic Artificial Intelligence School 2021 (Prob AI)
- ❖ "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 Auditability 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 Pensée" (**first author**)

#### 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](https://sums.brown.edu/), Maths and Illusion: exhibited a fractal-inspired pop-up book (2021)

#### 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)

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#### GRANT WRITING / PROPOSALS

- ❖ Microsoft Research, Reinforcement Learning Open Source Festival Proposal 2021  
(Awarded \$10,000)

## **GRANT WRITING / PROPOSALS**

- ❖ CDS&E Computational and Data-Enabled Science and Engineering Database Grant Proposal for SageMaths (as Key Personnel) (PI Ben Hutz, PhD) (not awarded) 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

## **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, PhD 2021
- Mentee, Women in Privacy and Security (WISP), D. Sharma, PhD 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

## **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, 2021
- Reviewer for Black in AI at NeurIPS workshop 2020
- 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

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

- Board Member, AI and Ethics, Springer 2020

## **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)

## RESEARCH PhD INVITATIONS

Participant, CRAFT workshop at ACM FAccT	2021
<ul style="list-style-type: none"><li>- Inspecting algorithms in 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, Post-Quantum Networks Workshop	2021
Participant, <a href="#">PRIMA</a> Summer School	2021
<ul style="list-style-type: none"><li>- Rational curves and moduli spaces in arithmetic geometry</li></ul>	
Initiative for Cryptocurrencies and Contracts (IC3) Blockchain Bootcamp	2021
<ul style="list-style-type: none"><li>- Worked on group project : Fairness consensus for Miner Extractable Value (<a href="#">MEVs</a>)</li><li>- Implemented Aequitas protocol from <a href="#">paper</a> with authors for fairness simulation</li><li>- One of top four winning teams chosen</li></ul>	
Participant, Scottish Programming Languages and Verification School	2021
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
<ul style="list-style-type: none"><li>- Invited Participant, "Threats and Opportunities for AI in Cybersecurity"</li><li>- Invited Participant, "Society-centric approaches to AI challenges in</li><li>- Invited Participant, "Environmental Enables for AI challenges in</li></ul>	2021 2021 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, Average-Case Complexity: From Cryptography to Statistical Learning	2021
Simons Institute, Innovations in Theoretical Computer Science ( <a href="#">ITCS</a> )	2021
Simons Institute, Geometric Methods in Optimization and Sampling Bootcamp	2021

## MERIT-BASED GRANTS / SCHOLARSHIPS

Google Grace Hopper Conference (GHC) Scholarship	2021
WISP & Black Hat USA Briefings Scholarship (1 of 25)	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
Participant, Algorithmic Game Theory Mentoring Workshop (AMW) (co-located with EC 2020)	2020
WiML ICML Travel Funding Grant (sponsor QuantumBlack)	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	2019-2021
Code2040 2020 Fellow (1 of 80)	2019
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>Upstate Number Theory Conference 2021 (lodging provided)</i>	2021
<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>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>	2019, 2021
<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

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## **ACADEMIC SERVICE**

<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

## **ACADEMIC SERVICE**

<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
<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>	

## **INDUSTRY PhD INVITATIONS**

<i>Participant, JP Morgan, Advancing Black Pathways in AI &amp; Quantitative Modeling Summit</i>	2021
<i>Participant, Facebook, Amplified: Above &amp; Beyond Computer Science Program (PhDs)</i>	2021
<i>Participant, Galois 1st Summer School on Trustworthy Machine Learning (1 of 35)</i>	2021
<i>Participant (via CSRMP), Google PhD Fellowship Summit</i>	2021
<i>Participant, Jane Street PhD Symposium (New York, remote)</i>	2021
<i>Participant, JP Morgan, Advancing Black Pathways in Data Science</i>	2021
<i>Participant, TwoSigma Mock Interview Day for Early Career Women in STEM</i>	2021
<i>Participant, Adobe, "The Future of Creativity" (Virtual)</i>	2020
<i>Participant, Microsoft Research, Frontiers in Machine Learning (Redmond, remote)</i>	2020
<i>Participant, Discover Bloomberg: Women in Engineering event (New York, remote)</i>	2020
<i>Participant, Twitter PhD ML Flock Event (New York, Boston office)</i>	2019

## **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

## **NON-ACADEMIC SERVICE**

<i>Invited Finalist 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
<i>Reviewer, Travel Grant Applications, Clojure Conj (2 rounds)</i>	2017

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## **PRESS**

<i>Featured in the "Black Girls CODE the Future" Coloring Book</i>	2021
<i>NCWIT, chosen (1 of 2) to Congratulate Dr. Gladys West for Pioneer Award (virtual)</i>	2021
<i>MacArthur Foundation profile on Black in AI organization's Impact</i>	2021
<i>VentureBeat "AI needs systemic solutions to systemic bias, injustice and inequality"</i>	2020



## **PRESS**

*Featured by Women of Silicon Valley, June Edition, 16 “Caribbean Techies”* 2020

## **INDUSTRY TALKS**

*Featured by Women of Silicon Valley, May Edition* 2020  
*Interviewed for CareerGirls.org Boston (videographed at MIT)* 2019  
*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  
*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

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

*“Isogeny Graph Cryptography”, School for Poetic Computation, Re-learning to love Maths* 2021  
*“Isogeny Graph Cryptography”, School for Poetic Computation, “Learning to Love Maths”* 2021  
*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 advisors Joe Near and Christelle Vincent* 2021-present

## **CLASSES (PhD)**

<i>Abstract Algebra: Focusing on Fields, taught by Christelle Vincent (Spring)</i>	2022
<i>Elementary Number Theory, taught by Christelle Vincent (Spring)</i>	2022
<i>Abstract Algebra I taught by Puck Rombach (Commutative Group theory) (Fall)</i>	2021
<i>Abstract Algebra III taught by Christelle Vincent : Prep for Maths Quals (Fall)</i>	2021
<i>(Post-quantum) Mathematical Cryptography, taught by Christelle Vincent (Spring)</i>	2021
<i>Privacy, Law and Policy, taught by Ryan Kriger (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

## **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>Rewriting the Code (RTC) Blockchain Basics + Developer Workshop</i>	2021
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## **WORKSHOPS (RELATED)**

<i>R Orange County Book Club (8 weeks Open Statistics)</i>	2021
- Presented review of chapter 4 and exercises for chapter 7	
<i>R Orange County Book Club (6 weeks Mastering Spark with R)</i>	2021
- Presented Chapters 10 and 11 (Distributed R, Extensions in Spark using R)	
<i>R Orange County Book Club (6 weeks Text Mining with R)</i>	
- Presented Chapter 7 (Twitter data Case Study in Text Mining with R)	
- Presented R code exercises relevant to assigned chapters	
<i>R Orange County Workshops</i>	2021
- Modeling Normally Distributed Data with Repeated Measures (February)	
- Transforming Data into Dashboards with Tableau (March)	
- R Virtual Science Hackathon (April) (project-based)	
<i>R Nimble virtual short course (C. Paciorek)</i>	2021
- Basic concepts on converting BUGS and JAGS models	
- MCMC sampling, model components for Bayesian non-parametric distribution	
<i>University of Vanderbilt Regression Modeling Strategies Short Course</i>	2021
- Four day course on regression modeling and causal models	
- Linear models, logistic and ordinal regression (F. Harrell, Jr., PhD, D. Levy, PhD)	

## **HACKATHONS**

<i>R Data Hackathon 2021, <u>First Place</u>, "Cast and Gender Roles in Movie Data"</i>	2021
- Our group won First place at the R Data Hackathon 2021 for Best Visualization	



## **HACKATHONS**

*Initiative for Cryptocurrencies and Contracts (IC3) Blockchain Bootcamp* 2021

- Worked on group project : Fairness consensus for Miner Extractable Value ([MEVs](#))
- Implemented Aequitas protocol from [paper](#) with authors for fairness simulation
- One of [top four winning teams](#) chosen

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

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

*Student Member, International Association of Cryptologic Research (IACR)* 2020-present

*SIGecom Special Interest Group on Economics and Computation* 2020-2021

## **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