

PERSONAL INFORMATION

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AREAS OF INTEREST

Human-centered Machine Learning, HCI, Algorithmic Audits, Robustness, Fairness, Explainability, Social Impacts of Algorithmic Adoption, Statistics

EDUCATION

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| <p>University of Maryland Doctor of Philosophy in Computer Science Advisor: John P. Dickerson</p> | <p>College Park, MD 2018 - Present</p> |
| <p>Master of Science in Computer Science</p> | <p>2018 - 2021</p> |
| <p>George Washington University Master of Science in Statistics</p> | <p>Washington, DC 2014-2016</p> |
| <p>University of Chicago Bachelor of Sciences in Mathematics <i>Departmental and General Honors</i></p> | <p>Chicago, IL 2010-2014</p> |

WORK EXPERIENCE

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| <p>University of Maryland <i>PhD Candidate, Advised by John P. Dickerson</i> – Published high-impact publications in venues like NeurIPS, IJCAI, CHI (award-winning), and FAccT – First to research Neural Architecture Search for fairness joint optimizations – Researched theoretical and empirical methods in computer vision, facial recognition, generative models, adversarial methods, computational social science, recommender systems, multi-armed bandits, human-computer interaction – Audited commercial cloud services for biases on AWS, Azure, GCP, Megvii Face++</p> | <p>2018 - Present</p> |
| <p>Amazon <i>Applied Scientist II Intern</i> – Designed and built architectures and machine learning models for machine learning systems for advertising to cookie-less and id-less traffic – Implemented production-level architecture of neural architecture search (NAS) and hyperparameter optimization (HPO) research – Conducted A/B experiments to validate the effectiveness of ML models and pipelines</p> | <p>Summer 2022</p> |
| <p>Max Planck Institute for Software Systems <i>Researcher, Advised by Elissa M. Redmiles</i> – Led award-winning research @ Conference on Human Factors in Computing Systems (CHI 2022) – Conducted qualitative human subjects research on Covid contact tracing app adoption by blanketing all of Louisiana with 6 million Google Advertisements – Authored Op-Ed in Scientific American discussing the results and implications of this research – communicating the technical findings for a lay audience</p> | <p>Summer 2021</p> |
| <p>National Geospatial-Intelligence Agency <i>Applied Machine Learning Scientist</i> – Managed team of 8 software developers and machine learning engineers with \$10,000,000 annual budget with goal of automating detections of objects in satellite imagery – Designed and built architectures for applied machine learning on large-scale data processing systems – Wrote, reviewed, and published production code – Created and published xView dataset which transformed overhead imagery computer vision</p> | <p>2014-2018</p> |

Samuel Dooley, George Zhihong Wei, Tom Goldstein, and John P Dickerson. Robustness disparities in face detection. In *Thirty-sixth Conference on Neural Information Processing Systems Datasets and Benchmarks Track, (NeurIPS)*, 2022

Angelica Goetzen, **Samuel Dooley**, and Elissa M Redmiles. Ctrl-shift: How privacy sentiment changed from 2019 to 2021. *The 22nd Privacy Enhancing Technologies Symposium (PETs)*, 2022

Marina Knittel, **Samuel Dooley**, and John P Dickerson. The dichotomous affiliate stable matching problem: Approval-based matching with applicant-employer relations. *The 31st International Joint Conference on Artificial Intelligence and the 25th European Conference on Artificial Intelligence (IJCAI)*, 2022

Samuel Dooley, Dana Turjeman, John P Dickerson, and Elissa Redmiles. Field evidence of pro-social messaging superiority in covid-19 app attractiveness. *ACM CHI Conference on Human Factors in Computing Systems (CHI)*, 2022 **Best Paper Honorable Mention**

Neehar Peri, Michael J Curry, **Samuel Dooley**, and John P Dickerson. Preferencenet: Encoding human preferences in auction design with deep learning. *Thirty-fifth Conference on Neural Information Processing Systems (NeurIPS)*, 2021

Vedant Nanda*, **Samuel Dooley***, Sahil Singla, Soheil Feizi, and John P Dickerson. Fairness through robustness: Investigating robustness disparity in deep learning. In *Proceedings of the 2021 ACM Conference on Fairness, Accountability, and Transparency (FAaCT)*, pages 466–477, 2021

Samuel Dooley, Michael Rosenberg, Elliott Sloate, Sungbok Shin, and Michelle Mazurek. Libraries’ approaches to the security of public computers. *5th Workshop on Inclusive Privacy and Security at SOUPS-20*, 2020

Samuel Dooley, Candice Schumann, Han-Chin Shing, John P Dickerson, and Philip Resnik. Sequential decision making in resource constrained global health settings. *ML For Global Health at ICML-20*, 2020

Duncan C McElfresh, **Samuel Dooley**, Yuan Cui, Kendra Griesman, Weiqin Wang, Tyler Will, Neil Sehgal, and John P Dickerson. Can an algorithm be my healthcare proxy? *Workshop on Health Intelligence at AAAI-20*, 2020

Darius Lam, Richard Kuzma, Kevin McGee, **Samuel Dooley**, Michael Laielli, Matthew Klaric, Yaroslav Bulatov, and Brendan McCord. xview: Objects in context in overhead imagery. *ML for the Developing World at NeurIPS*, 2018

Eliza Mace, Keith Manville, Monica Barbu-McInnis, Michael Laielli, Matthew Klaric, and **Samuel Dooley**. Overhead detection: Beyond 8-bits and rgb. *Naval Applications of Machine Learning*, 2018

Samuel Dooley. Basic algebraic topology: the fundamental group of a circle. *University of Chicago VIGRE REU proceedings*, 2011

Samuel Dooley*, Rhea Sukthanker*, John P Dickerson, Colin White, Frank Hutter, and Micah Goldblum. On the importance of architectures and hyperparameters for fairness in face recognition. *Under Submission.*, 2022

Alan F. Luo, Noel Warford, **Samuel Dooley**, Rachel Greenstadt, Michelle Mazurek, and Nora McDonald. How library it staff navigate privacy and security challenges and responsibilities. *Under Submission.*, 2022

Samuel Dooley, Ryan Downing, George Wei, Nathan Shankar, Bradon Thymes, Gudrun Thorkelsdottir, Tiye Kurtz-Miott, Rachel Mattson, Olufemi Obiwumi, Valeriia Cherepanova, Micah Goldblum, John P Dickerson, and Tom Goldstein. Comparing human and machine bias in face recognition. *Under Submission. arXiv preprint arXiv:2110.08396*, 2021

Samuel Dooley, Candice Schumann, Han-Chin Shing, John P Dickerson, and Philip Resnik. A multi-stage human-machine framework for mental health risk assessment. *Under Submission*, 2020

Samuel Dooley and John P Dickerson. The affiliate matching problem: On labor markets where firms are also interested in the placement of previous workers. *Working Paper. arXiv preprint arXiv:2009.11867*, 2020

Kevin Kuo, Anthony Ostuni, Elizabeth Horishny, Michael J Curry, **Samuel Dooley**, Ping-yeh Chiang, Tom Goldstein, and John P Dickerson. Proportionnet: Balancing fairness and revenue for auction design with deep learning. *Under Submission. arXiv preprint arXiv:2010.06398*, 2020

Samuel Dooley and John P Dickerson. Global best arm identification in contextual bandits. *Working Paper*, 2020

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| AWARDS | Scholar Award , NeurIPS | 2022 |
| | Dean's Fellowship , UMD, (\$5,000) | 2018-2020 |
| | Graduate Student Fellowship , GWU, (\$14,440) | 2015-2016 |
| | Tuition Assistance Program , DoD, (\$40,000) | 2014-2016 |
| | SMART Scholarship , DoD, (\$241,000) | 2011-2014 |

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| SERVICE | Program Committee | |
| | FACCT, 2022 | |
| | CLPsych Workshop at NAACL, 2021 | |
| | Reviewer | |
| | NeurIPS 2020, 2021, 2022 | |
| | ICML 2021, 2022 | |
| | CVPR 2022 | |
| | UAI 2022 | |
| | Algorithmic Fairness through the Lens of Causality and Robustness (AFCR) workshop @ NeurIPS 2021, 2022 | |
| | EC 2021 | |
| Machine Deception Workshop at NeurIPS 2017 | | |

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| TALKS | CHI | 2022 |
| | Google (Invited) | 2021 |
| | FACCT | 2021 |
| | INFORMS | 2020 |
| | 5th Workshop on Inclusive Privacy and Security (WIPS) | 2020 |

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| TEACHING EXPERIENCE | Teaching Assistant | |
| | CMSC 320: Introduction to Data Science, <i>University of Maryland</i> | Fall 2019, Spring 2020 |
| | CMSC 422: Introduction to Machine Learning, <i>University of Maryland</i> | Spring 2019 |
| | CMSC 389N: Introduction to PHP & Javascript, <i>University of Maryland</i> | Fall 2018 |