



MADISON COOTS

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EDUCATION

Stanford University, Stanford, CA, September 2015 – June 2021

M.S. Computer Science, '21

Specialization: Artificial Intelligence

B.S. in Management Science and Engineering, '19

Minor: English

WORK EXPERIENCE

Data Scientist | Stanford Computational Policy Lab | July 2021 - Present

Leading efforts to curate and define analysis projects with several government and nonprofit partners, such as analyzing prosecutorial charging data and performing statistical evaluations of diversion programs. Performing data analyses for the purpose of developing an algorithm for optimally and equitably providing transportation assistance to individuals with pending court dates.

Data and Risk Consultant (Part-time) | Aerospace Technical Services | August 2020 – Present

Refining the risk management and mitigation practices employed by investor-owned public utility companies. Performed probabilistic risk analyses of electric systems to inform decision makers of critical sources of risk within the system. Engaged with clients to understand the motivations for their current risk management methods and used this information to recommend improvements to their risk management practices. Helped develop and teach a foundational course in decision and risk analysis for employees of the client company.

Research Assistant | Stanford Computational Policy Lab | September 2020 – June 2021

Coordinated development efforts for an application aimed at helping individuals faced with criminal charges appear in court. Facilitated communication between the lab and external stakeholders involved in the initiative, including those from nonprofits and government agencies. Separately, helped to coordinate the lab's search for new partnerships with external agencies and writing project proposals for new opportunities for collaboration.

Data Science Fellow | U.S. Federal Government | June 2017 – January 2021

Engaged in a variety of data science initiatives across the organization. Developed and released a complete Python package to enable data scientists to more quickly, and intuitively conduct network analyses and generate clear and informative visualizations. Served as lead data scientist in developing a system to analyze and reveal new mission targets, allowing stakeholder to better direct future data collections. Designed customized object-oriented model for grouping and structuring data records, allowing for the exploitation of unseen connections between entities of interest.

TEACHING

Course Assistant | MS&E 252 (Decision Analysis I) | MS&E 125 (Applied Statistics) | 2019 - 2020

Prepared and lead weekly discussion sections to reinforce concepts from lecture through content review, worked examples, and coding practice. Advised and guided students in the application of course methods to case study and final projects. Held weekly office hours, responded to student questions on course forums, and managed course logistics. Received award from Stanford Center for Professional Development for excellence in teaching.

Section Leader | Code in Place | April 2020 – May 2020

Part of a teaching team for Code in Place, offered by Stanford during COVID-19 pandemic, with 10,000 global students and 900 volunteer teachers participating from around the world. Prepared and taught a weekly discussion section of 10-12 student to supplement professors' lectures in a 5-week introductory online Python programming course based on material from the first half of Stanford's introductory programming course.

FELLOWSHIPS

U.S. Government Undergraduate Scholar, 2015 - 2019 | U.S. Government Graduate Scholar 2019 - 2021 | Stanford Engineering Coterminal Fellowship 2019 – 2020

SKILLS

Machine Learning | Stochastic Modeling | Linear Optimization | Probabilistic Analysis | Decision and Risk Analysis | Data Visualization | Web Development

LANGUAGES

Python | R | SQL | C ++ | Julia | Java Script | HTML | CSS