



# MADISON COOTS

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## EDUCATION

### **Stanford University, Stanford, CA, 2015 – Present**

M.S. Computer Science, '21

Concentration: Artificial Intelligence

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

Minor: English

## WORK

## EXPERIENCE

### **Data Scientist | Stanford Computational Policy Lab | September 2020 - Present**

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

### **Risk Analyst Subcontractor | Aerospace Technical Services | August 2020 – Present**

Collaborating with the team from Aerospace Technical Services to refine the risk management and mitigation practices employed by California investor-owned public utilities. Work involves engaging with the client to understand the motivations for their current methods and using this information to enhance their risk management practices with appropriate application of methods from probabilistic risk analysis. Helped teach a foundational course in decision and risk analysis for employees of a utility company.

### **Head of Data Science | Lucid | November 2017 - Present**

Leading technical deployment of newly launched startup. Involvement has included overseeing software development contracts, and evaluating algorithms used in the application according to different assumptions about data generation process underlying the product targets. In preparation for release of Lucid's web-based application, conducted statistical simulations to determine optimal parameters for our data collection system.

### **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 Coterminial Fellowship 2019 – 2020

## SKILLS

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

## LANGUAGES

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