Rohit Musti

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Work Experience

American Forests, *Senior Manager of Data Science (Software & Data Engineer)* *40 hours/week, May 2020 - Present*

- *Tree Equity Score*: Delivered first-of-its-kind national Tree Equity Score; covered in NYTimes and many local news outlets.
  - Solely developed data processing pipelines that calculate the Tree Equity Score for over 150,000 neighborhoods in 486 US cities; combining over 25 datasets (2,558 satellite tiles, 14,586 census files, & several tree canopy datasets).
  - Developed an user-friendly interactive web map and impact calculator for exploring the Tree Equity Score and a deep-dive analysis tool for urban foresters & city planners to set equity-focused tree canopy goals and plan the exact parcels that they want to plant trees on (Tree Equity Score Explorer & Analyzer); over 40,000 users combined.
  - Exceeded goal of calculating Tree Equity Score for 5 cities, instead delivering it to 486 municipalities.
  - Wrote and built data stories about the intersections between tree canopy and race, poverty, and health.
  - Communicated data engineering methods to technical & non-technical audiences (ranging from peers at a data conference to Detroit city planners).
- *Interactive Web Mapping*: Created web map and database of over 1,400 tree planting & urban forestry projects going back to 1990. Developed career pathways interactive web map to help users access career opportunities in urban forestry.
- *Technology Management:* Helped clean and manage CRM and assisted in the management of its GIS & IT infrastructure. Collaborated with database stakeholders to improve data quality, enabling more informed fundraising.
- *In Progress:* analysis and visualization of tree species migration under various climate action scenarios; developing an AI model to derive tree canopy data from satellite images, creating free and open tree canopy data nationwide for the first time.

Hunter College, CUNY, *Lecturer* *20 hours/week, November 2020 - Present*

- Teaching a 3 credit undergraduate course (in Spring 2022) as a member of the Tech-In-Residence Corps.
- Lecturing for 2 hours and 40 minutes a week for 16 weeks & developing all course material, assignments, and exams

Graduate Cryptography *Graduate Teaching Assistant* *5 hours/week, January - May 2020*

- Hold 1.5 weekly office hours for a class of 30 students, as sole TA, and proof read all 5 homework assignments
- Grade 5 homework assignments & take home exam for all 30 students, and write test cases for 2 programming homeworks

Graduate Research Work *Graduate Student Researcher* *5 hours/week, August 2019 - May 2020*

- Developed a neural net to detect code switches (changes in language/dialect), enabling multi-lingugal NLP models
- Implemented a typechecking system language that allowed for further optimizations to be made based on the type analysis

Digital Governance Lab *Student Instructor* *5 hours/week, August 2019 - May 2020*

- Developed public interest technology curriculum to critically examine the impacts of digital technology (13 seminars/semester)
- In the Fall, taught to 8 students (5 tech & 3 policy), culminating in a critique of senior engineering capstone projects
- In the Spring, taught to 6 students (4 tech & 2 policy), each developing their own public interest tech policy or project

Red Hat: AI Center of Excellence *Graduate AI Research Intern* *40 hours/week, May - August 2019*

- Designed internal data processing pipeline to clean and featurize client interaction data for AI Natural Language Processing
- Researched NLP question and answering and text generation techniques, working towards a client-facing chat bot
- Identified structural issues with the state of the art NLP techniques that block approaches scalable solutions

Algorithms *Head Teaching Assistant* *20 hours/week, January - May 2018*

- Managed team of 5 TAs and organized review sessions twice a week to recap content
- Edited 10 homework assignments, designed 2 exams, at least 3 test cases per homework, & managed auto-grading tools

Red Hat: Open Innovation Labs *Site Reliability Engineering Intern* *40 hours/week, May - August 2018*

- Worked directly with the software reliability engineering team to solve pressing back log items to stabilize dev-ops pipeline
- Automated infrastructure deployment of Open Shift and all relevant tooling, saving an estimated 100 hours per client
- Built search feature for the Open Practice Library from scratch to increase access to the library
- Participated in the Open Innovation Lab's DevOps Enablement training: learned Agile and DevOps best practices

Introduction to Computer Science *Teaching Assistant* *10 hours/week, January - December 2017*

- Led 2 lab group review sessions per semester, graded 20 homework assignments/exams for over 20 students each semester
- In first semester, helped over 180 students, most of any other TA

Education

University of Virginia
Bachelors of Arts, Computer Science '19
Masters of Computer Science *(3 + 1)* '20

Honors: Jefferson Scholar (full ride merit scholarship), Echols Scholar, Dean's List
Focus: Deep Learning, Algorithms, Cryptography, Social Impacts of Technology

Skills

Programming Languages: Python, Java, C++, C, Javascript, R, Rust, Typescript

Tools: LaTeX, Pytorch, Tensorflow, Ansible, Docker, Django, React, NextJS, Markdown, Arcpy, GeoPandas, Mapbox, Git