

Rohit Musti

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portfolio: <https://rohitmusti.github.io/> — email: rohit.musti.rm@gmail.com — github: <https://github.com/rohitmusti>

Work Experience

American Forests, Director of Software and Data Engineering

40 hours/week, January '22 - Present

- **Tree Equity Score:** Delivered first-of-its-kind national Tree Equity Score; covered in NYTimes and many local news outlets.
 - Coordinating, planning, and contributing to the maintenance of our existing data infrastructure
 - Re-architecting and building our Deep Dive Analysis and Plannign tool to better horizontally scale.
 - Continuing to build our data stories and communication infrastrcture and work through data shorts and integrating data into other communications work.
- **Technology Management:** Architecting and managing dev-ops infrastructure across the organization.
- **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.

American Forests, Senior Manager of Data Science (Software & Data Engineer) 40 hours/week, May '20 - January '22 - 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.

Hunter College, CUNY, Lecturer

20 hours/week, November '21 - 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 '20

- 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 '19 - May '20

- Developed a neural net to detect code switches (changes in language/dialect), enabling multi-lingual 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 '19 - May '20

- 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 '19

- 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 '18

- 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 '17

- 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: L^AT_EX, Pytorch, Tensorflow, Ansible, Docker, NextJS, GDAL, Arcpy, GeoPandas, Mapbox, Git