RYAN RUSALI

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EDUCATION

Carnegie Mellon University

Master of Science: Civil Engineering — **Expected December 2021**

Bachelor of Science: Civil Engineering with Additional Major in Engineering & Public Policy — **May 2021**

QPA: 3.77/4.00, College of Engineering Dean's List 2018, 2019, and 2020

WORK EXPERIENCE

Data Scientist and Policy Analyst Intern | ClearPath — **Summer 2021**

- Conducted large scale data analysis and visualization to inform federal clean energy policy recommendations related to hydrogen, clean energy interconnection processes, and the importance of utility decarbonization commitments
- Established Google Cloud and Amazon Web Services platforms for cloud-based runs of the Temoa and PowerGenome energy models

Teaching Assistant | Civil Engineering Department — **Spring 2021**

- Organized office hours, held one-on-one meetings with students, and graded for the Civil and Environmental Engineering department's 12-752 graduate level data management course of 10+ Masters and PhD students

PROJECT EXPERIENCE

Characterizing Urban Textures | Civil Engineering, Computer Science — **Summer 2020 – Spring 2021**

- Utilized molecular simulation software (OVITO), QGIS, Python, and MATLAB to relate urban textures to larger scale urban phenomena
- Created new computational tools and workflows to allow software and code libraries from very different fields of study to effectively interact and share results

Public Policy Analysis and Design | Engineering & Public Policy — **Spring 2021**

- Modeled and created visualizations to demonstrate the relationship between state gas tax revenue and emissions due to varying levels of electric vehicle adoption for each state in the United States from 2020 – 2030
- Coordinated a multi-disciplinary team of 30+ engineers, policy makers, and information scientists to produce a ~300 page report finding that the current state of the U.S. electricity grid, rare-earth element supply chains, and cybersecurity may be insufficient to support high electric vehicle adoption rates

Public Policy Analysis and Design | Engineering & Public Policy — **Fall 2020**

- Performed a comprehensive literature review of residential decarbonization policies to analyze what policies might be most effective in Allegheny County, Pennsylvania
- Engaged with a multi-disciplinary team of 30+ engineers, policy makers, and information scientists to produce a ~300 page report on strategies to decarbonize residential energy use in Allegheny County finding that decarbonizing local electricity generation, retrofitting older housing, and updating local building codes are essential to decarbonization

PUBLICATIONS

High-Throughput Analysis of Urban Textures using Methods from Molecular Simulation — **Fall 2020**

- Research lead and first author on a first-of-its-kind interdisciplinary project combining concepts from molecular physics and civil engineering to analyze urban textures
- Presented the findings at Carnegie Mellon's Meeting of the Minds and the Association for Computing Machinery's BuildSYS 2020 conference

Clear Path to a Clean Energy Future 2021 — **Summer 2021**

- Major contributor on a 50+ page report analyzing the role of electric utility commitments in achieving U.S. 2050 decarbonization goals
- Researched, wrote, and helped create data visualizations for sections of the paper relating to energy modeling, geographical coverage of utility commitments, and deployment levels of different technologies

SKILLS & AWARDS

Software: HTML, CSS, JavaScript, Python, MATLAB, Ovito, QGIS, AWS, Google Cloud, and AutoCAD
Awards: Andrew Carnegie Scholar, Italo V. (Ody) Mackin Achievement Award, Best Prototype - Rethink the Rink Hackathon, Civil and Environmental Engineering Research Award, and CMU Senior Leadership Award