ALLISON "ALLI" BUSA

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Computer scientist interested in development and analysis; passionate about environmentally-focused work

EDUCATION

Technical University of Denmark Lyngby, Denmark — **May 2024**
MSc Mathematical Modeling and Computation

Olin College of Engineering Needham, MA, USA — **May 2021**
BSc Electrical and Computer Engineering — **3.91/4.0 GPA**

SKILLS

Technical Skills	**Python, R, MATLAB, C++ (beginner), SQL, Linux, Git, Docker**
Soft Skills	**Self-directed learning, Team-management, Communication, User design**

EXPERIENCE

MethaneSAT, Environmental Defense Fund — **Summer 2022**
Backend Software Engineering Intern

In CI framework, developed a data pipeline and corresponding data structures to retrieve NASA meteorological data, process and input it into a database

- **Created local and Google Cloud PostgreSQL databases with ability to automatically create geometry data based on input latitude and longitude; created SQL script to retrieve subset of data with an input geographical bounding box**
- **Developed in cloud computing framework by containerizing code with Docker and managing deployment with Flyte**

East Boston Air Quality Research, Olin College — **January 2020 - October 2021**
Air Quality Data Scientist

Designed and executed initial data analysis of sensor data from multi-year air quality monitoring project; Currently involved in the writing process of the results

- **Developed R scripts which import, clean and format 2 GB of AQ data from low-cost sensors; adapted Raman Spectroscopy filtering to minimize NO sum of squares error up to 36%**
- **Created data visualization using R, Illustrator, user feedback and principles of design**
- **9 months of research fully funded by Clare Boothe Luce Scholarship Award**

Senior Capstone Program, Olin College — **September 2020 - May 2021**
Student Intern

Conducted an Operations-Research project for Amazon Robotics to simulate and optimize robotic logistics in microfulfillment centers

- **Created a Python simulation of synchronized robot activity with 14 class agents and a max resource status size of 9**
- **Through comparison of 5 task allocation algorithms, demonstrated that key optimization parameters are initial system setup**

NSF Research Experience for Undergraduates, Montana State University — **Summer 2018**
Soundscape Researcher

Worked with ecologically-minded professor to create tool for ornithologists

- **Created MATLAB program which detects Red-winged Blackbird songs in long audio files with 60 to 85% accuracy**
- **Utilized program to observe patterns of songs between regions in the U.S.**