ADITYA KRISHNA

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SUMMARY OF QUALIFICATIONS

- **Machine Learning & Signal Processing**: Design and Implementation of Adaptive Filters for Noise Cancellation and System Identification. Experience with CNN architecture to detect animal vocalizations using spectrograms.
- **Software Development**: Extensive experience using Git and GitHub. Developed Python scripts and Jupyter notebooks for data analysis and visualization within GitHub project repositories.
- **Research**: Experience in reading research literature to communicate findings to subject experts. Extensive practice with acoustic data collection, management, and analysis in the field.
- **Technical Skills**: Java, Python, MATLAB, RavenPro, and AudioMoth
- **Software Libraries**: Pandas, SciPy, NumPy, and TensorFlow

EDUCATION

University of Washington — Seattle, WA
Bachelor of Sciences, Electrical Engineering — *Expected June 2024*
- Concentrations in Digital Signal Processing and Neural Engineering
- Mary Gates Endowed Research Scholar

EXPERIENCE

Undergraduate Research Assistant — September 2021 – Present
Applied Physics Laboratories, University of Washington — *Seattle, WA*
- Working under lab's principal investigator on the Union Bay Natural Area Bat Project described below.
- Presenting monthly briefings on academic journals related to machine learning and passive acoustic monitoring.
- Participating in weekly project updates offered by colleagues in data science, machine learning, and oceaonography.

Software Development Intern — June 2019 – Aug 2019
HCL America Inc. — *Redmond, WA*
- Assisted employees in developing a software application that employed Regular Expressions and Natural Language Processing (NLP) libraries to extract key candidate information from resumes to establish an efficient method for matching candidate profiles with the company's desired job placement.
- Developed experience in Python, StanfordNLP, RegExes, Pandas, and Amazon Web Services such as DynamoDB, S3, and Amazon Cloud, where the application ran.
- Demonstrated communication and led weekly Scrum meetings with the manager to provide project demos.

PROJECTS

Union Bay Natural Area Bat Project — September 2021 – Present
Supervisor: Dr. Wu-Jung Lee — *Seattle, WA*
Plan to use machine learning and neural networks to detect, classify, and study the foraging and social behaviors of bats by their echolocation call activity.

- Maintained the deployment of 6 Audiomoth recorders twice a week from June 2022 to October 2022 to collect field data on bat echolocation at 6 unique locations in the Union Bay Natural Area.
- Using RavenPro audio-editing software to design and run bat echolocation call detectors to estimate bat activity.
- Designed Python scripts and Jupyter Notebooks to organize bat call activity over deployment sessions as Pandas DataFrames which were then used to represent activity in several forms.

TALKS

25th Annual Undergraduate Research Symposium — May 20th 2022
University of Washington — *Seattle, WA*
- Presented on the use of machine learning methods to cost effectively monitor a local population of bats by their acoustical activity.
- Demonstrated preliminary results of using Bat Detective, a machine learning package, and explored its precision and recall rates on local bat echolocation data.