

ADITYA KRISHNA

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PROFESSIONAL SUMMARY

Electrical and Computer Engineering PhD student at the University of Washington studying signal processing, machine learning, acoustics, and auditory neuroscience, to develop biologically-inspired sensing algorithms.

EDUCATION

University of Washington

Seattle, WA

Bachelor of Sciences, Electrical Engineering (Neural Engineering & Signal Processing)

June 2024

- Overall GPA: 3.78 / Major GPA: 3.90
- 2022-2023 Academic Annual Dean's List

HONORS AND AWARDS

Undergraduate Research Conference Travel Award

Office of Undergraduate Research

University of Washington, Seattle

Spring 2024

ECE DEI Conference Travel Award

Electrical and Computer Engineering DEI Committee

University of Washington, Seattle

Spring 2024

Mary Gates Endowed Research Scholarship

Mary Gates Endowment for Students

University of Washington, Seattle

Winter 2023

RESEARCH EXPERIENCE

Undergraduate Researcher

September 2021 – June 2024

Advisor: Professor Wu-Jung Lee, Applied Physics Laboratory

Seattle, WA

- **Main Project:** Used data-driven methods to investigate subsampling for passive acoustic monitoring of bats
- **Data Collection:** Led team efforts between June - December 2023 using **Audiomoths** to record 24-hr ultrasonic acoustic data (roughly 16TB) from 6 locations across a nearby urbanized natural area
- **Soft Skills:** Supervised training of new lab members and wrote instructional material – uploaded to **GitHub** – to assist fieldwork for collecting acoustic data using Audiomoth recorders.

CAPSTONE PROJECTS

These were senior capstone projects that needed to be ideated, proposed, and prototyped over a 10-week quarter.

MyoGrind: Bruxism Management Device (Showcase Winner)

Spring 2024

BIOEN 461: Neural Engineering Tech Studio by Professor Kim Ingraham

University of Washington, Seattle, WA

- Led the design of a system that used **Arduino** and **MyoWare** muscle sensors to record EMG from the masseter muscles and detect teeth grinding to notify users via bluetooth, LED indicators, and vibro-tactile stimulation.
- Our team won the final showcase which involved industry experts and medical professionals acting as judges to evaluate our product's value proposition, customer discovery process, and live prototype demo.

WeatherPatrol: TinyML Rain Prediction using Arduino Nano 33 BLE

Spring 2024

EE 400A: TinyML by Professor Radha Poovendran

University of Washington, Seattle, WA

- Developed and deployed a **TinyML model (F-1 score > 0.8)** on the **Arduino Nano 33 BLE** to read temperature, pressure, and relative humidity from the environment and predict if there would be rain in the next 30 minutes.
- Programmed Nano to invoke **TensorflowLite** model and broadcast predictions over **Bluetooth Low-Energy (BLE)** to bluetooth central devices and equipped system with rechargeable batteries to make device fully deployable.

SELECTED CONFERENCE PRESENTATIONS

Krishna A, Lee W-J. (2024) Investigation of Duty Cycles for Measuring Activity in Passive Acoustic Bat Monitoring. The 186th Meeting of the Acoustical Society of America, Ottawa, Ontario, Canada, May 13-17, 2024.

TECHNICAL SKILLS

Programming Languages: Python, MATLAB, Arduino IDE, Java, LaTeX

Software Libraries: Pandas, SciPy, NumPy, TensorFlow, Keras, scikit-learn

Software Development: Bash, Git/GitHub, VSCode, Conda/Mamba, Jupyter

RESEARCH SYMPOSIUMS

26th Annual Undergraduate Research Symposium

May 19th 2023

University of Washington

Seattle, WA

- Presented on preliminary research on duty cycle-based strategic subsampling for the passive acoustic monitoring of bats to reduce data management costs while collecting representative data.

25th Annual Undergraduate Research Symposium

May 20th 2022

University of Washington

Seattle, WA

- Presented preliminary results of using Bat Detective, a **CNN**-based bat call detector trained on bat calls from Romania and Bulgaria, and explored its success in detecting bat calls collected from Seattle.