

Caesar Tuguinay

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EDUCATION

BS Mathematics, Minor Data Science

University of Washington, Seattle WA – Oct 2019 - Jun 2023

Relevant Courses: Database Systems, Data Visualization, Data Science in the Humanities, Data Reasoning, Artificial Intelligence, Web Programming, Lower Level Programming, Numerical Analysis, Mathematical Modeling, Combinatorics and Graph Theory, Linear Algebra, Probability Theory and Statistics, and Stochastic Processes.

TECHNICAL WORK EXPERIENCE

Acoustics Research Assistant, Echospace Lab – University of WA, Seattle WA – May 2023 - Current

- Under the tutelage of Professor Wu-Jung Lee and Dr. Valentina Staneva, worked on the Hake ML project: A Data Processing and Convolutional Neural Network project focused on the development of Machine Learning models for automatically detecting Pacific Hake in large volumes of Echosounder data.
- Maintained and developed Echoregions: A data processing software package that creates region and bottom masks for Echosounder data using Echoview data and backscatter data products from Echopype.
- UBNA Bat Passive Acoustic Monitoring: Field data collection, management, processing, and analysis tasks to gain information from the collected passive acoustic monitoring datasets.

Text Processing Research Assistant, Humanities Data Lab – University of WA, Seattle WA – Feb 2023 - Current

- Under the tutelage of Professor Anna Preus, worked on a large dataset of publication information for books by 20th-century authors from areas colonized by the British Empire.
- Developed and tested alternate methods for Fuzzy Matching of imprecise OCR-generated strings, applied text parsing processes in Python to new publication information volumes, and created metrics for quantifying data quality.

Acoustics Research Assistant, QuILLS Lab – University of WA, Seattle WA – Jan 2023 - Current

- Under the tutelage of Professor Gabriel Cler, translated current digital signal processing/acoustic research into Python applications to create intermediary measures for speech performance, to be used for later regression-based problems.
- Using Praat and other speech analysis resources, investigated the behavioral, physical, and phonetic properties in stuttering speech associated with the frequency domain, intensity, and duration.

Data Science Intern, Aeyesafe, Seattle WA – Jun 2022 - Aug 2022

- Worked on a data transformation pipeline to bring large amounts of pre-labeled data into a format our models could use, which increased our original training dataset by over 1000%.
- Tracked model experiment progress metrics over numerous iterations to strategize ways of incrementally improving model experiments based on these metrics.

Computer Science Instructor, CodeNinjas, Covington WA – May 2022 - Aug 2022

- Taught classes of 6-12 students the computer science concepts of logic, functions, control flow, data structures, and OOP principles by guiding them through the creation of games on various software development platforms.
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TECHNICAL PROJECTS AND LEADERSHIP

Philippines Social Media Data Project, University of Washington, Seattle WA – Aug 2022 - Dec 2022

- Led a social media research team to derive insight from the recent Philippines Presidential Election.
- Dealt with overseeing/commenting on pull requests, setting up issues, and consulting UW faculty research advisors.

Elevator Systems Machine Learning Project, University of Washington, Seattle WA – May 2022 - Sep 2022

- Worked on an applied math research team to derive an elevator model that minimizes wait/travel time using DQNs.

Technology Coordinator, Husky Running Club, Seattle WA – Sep 2021 - May 2023

- Developer/Webmaster for dawgs.run: Expanded and updated HTML/CSS/JavaScript to keep up with current events.
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TECHNICAL SKILLS

Languages: Python, SQL, Matlab, and JS/HTML/CSS. **Database Systems:** PostgreSQL, MongoDB, and MySQL.

Frameworks/Libraries: Dask/Concurrency, Zarr, Tensorflow/Pytorch, OpenCV, and Xarray/Numpy/Pandas.

AWS Cloud Computing: S3, EFS, EC2, Lambda. **Development Tools:** Mamba/Conda, Git, Github Actions, and Pytest.