

Vishal Nagarajan

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EDUCATION

University of California, San Diego

M.S. Computer Science

San Diego, United States

Sep 2022 – Jun 2024 (Expected)

Sri Sivasubramaniya Nadar College of Engineering

B.E. Computer Science and Engineering, GPA: 8.55/10.00

Chennai, India

Aug 2018 – May 2022

EXPERIENCE

Solarillion Foundation

Teaching Assistant and Research Assistant

Chennai, India

Jun 2020 – Jun 2022

- Guided 5 students through orientation assignment phase in Python and basics of machine learning.
- Worked in an ML research group and detected atrial fibrillation with maximum accuracy of 95%.
Learned powerful data preprocessing techniques.

PUBLICATIONS

- Led the team through inception and implementation process. Spearheaded the programming and deployment process - Scalable machine learning architecture for neonatal seizure detection on ultra-edge devices IEEE AISP, Feb 2022
- Co-authored the research paper. Contributions include data preprocessing and model tuning.
End-to-end optimized arrhythmia detection pipeline using machine learning for ultra-edge devices IEEE ICMLA, Dec 2021

OPEN SOURCE CONTRIBUTION

PySigPro: A one-stop open-source Python package for signal processing and feature extraction of HRV features, and features pertaining to seizures, maintained interactively on [GitHub](#). To be published as PyPI distribution.

SKILLS

- **Machine Learning:** scikit-learn, Keras, TensorFlow, PyTorch
- **Frameworks & Libraries:** Numpy, Pandas, Matplotlib, Git, Angular, ReactJS, MongoDB
- **Languages:** Python, C, C++, Java, HTML, JavaScript, SQL, TypeScript
- **Hardware:** Raspberry Pi
- **Linux Server Admin:** Managed dependencies for ML compute server and workplace automations

SELECTED PROJECTS ¹

- **TechWorld** (Javascript, 2021)
E-commerce web application based on MERN Stack
Included functionalities that enable users to purchase and admin to add products. Cart uses cookies to store products in cart accurately. Order history is stored. User and Admin sign-ins are token authenticated using JWT. [\[code-link\]](#)
- **Solarillion Website** (Javascript, 2021)
Official website of Solarillion Foundation
Revamped research and contact pages using Google App Script and Javascript. [\[code-link\]](#)
- **Flight Delay Prediction** (Python, 2020)
eXtreme Gradient BOOST classifiers and regressors
Built a two-staged pipeline consisting XGBoost Classifier and Regressor to evaluate the delay of flights in minutes. This pipeline achieved a Mean Absolute Error of 13.82 minutes, R^2 score of 0.94, and Root Mean Square Error of 18.92 minutes. [\[code-link\]](#)
- **Bradycardia Prediction** (Python, 2020)
InceptionTime and Encoder models
Developed neural networks including Encoder and InceptionTime – trained and tested on a bradycardia dataset. [\[code-link\]](#)

¹See full list of research paper implementation and projects on [GitHub](#)