

Vishal Nagarajan

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EDUCATION

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| Sri Sivasubramaniya Nadar College of Engineering B.E. Computer Science and Engineering, GPA: 8.33/10.0 (6 semesters) | Chennai, India 2018–Current |
| Chinmaya Vidyalaya, Taylors Road Grade 12 CBSE in Computer Science, Score: 478/500 (95.6%) | Chennai, India 2018 |
| Chinmaya Vidyalaya, Taylors Road Grade 10 CBSE, GPA: 10.0/10.0 | Chennai, India 2016 |

EXPERIENCE

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| Solarillion Foundation Undergraduate Research Assistant – Atrial Fibrillation Detection – Worked in an ML Research group to detect fibrillation (AF+VF) in subjects using scalable machine and deep learning to deploy on ultra-edge devices | Chennai, India June 2020–August 2021 |
| Solarillion Foundation Undergraduate Project Assistant – Flight Delay Prediction – Handled different file formats (CSV, JSON, TSV), Data Preprocessing and Feature Extraction, Basic Data Visualization using Matplotlib and Seaborn | Chennai, India January 2020–April 2020 |

PUBLICATIONS

- [1] S. J. B, S. K. T, **V. Nagarajan**, S. S, and V. Vijayaraghavan, *End-to-end optimized arrhythmia detection pipeline using machine learning for ultra-edge devices*, <https://github.com/vishaln15/OptimizedArrhythmiaDetection>, 2021. arXiv: 2111.11789 [cs.LG].
- [2] **V. Nagarajan**, A. Muralidharan, D. Sriraman, and P. K. S, *Scalable machine learning architecture for neonatal seizure detection on ultra-edge devices*, <https://github.com/vishaln15/NeonatalSeizureDetection>, 2021. arXiv: 2111.15569 [eess.SP].

TEACHING

- **Teaching Assistant** at Solarillion Foundation
Teaching Assistant for 5 students through orientation assignment phase containing Python and Machine Learning Basics, and orientation phase
June 2020–Current

OPEN SOURCE CONTRIBUTION

- **PySigPro:** A one-stop open-source Python package for signal processing and feature extraction maintained interactively on github.com/vishaln15/pysigpro. To be published as PyPI distribution.

SKILLS

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

LANGUAGES

- **English:** Bilingual proficiency level
- **Tamil:** Native proficiency level
- **Hindi:** Professional proficiency level
- **Spanish:** Elementary proficiency level

PROJECTS

See full list of projects on github.com/vishaln15

- **TechWorld** (React, 2021)
MERN Stack web application like Amazon
With React as frontend and Node in the backend, TechWorld is an Amazon-like website where users can purchase products and admin can add products. [code-link]
- **Solarillion Website** (Javascript, 2021)
Official website of Solarillion Foundation
Contributions include revamping research, contact pages using Google App Script and Javascript. [code-link]
- **Flight Delay Prediction** (Python, 2020)
Machine Learning model
Two-staged pipeline to evaluate the delay of flights in minutes. [code-link]
- **Bradycardia Prediction** (Python, 2020)
Neural Networks for prediction
Multiple neural networks including Encoder, InceptionTime, and Seq-to-Seq models trained and tested on popular Physionet Bradycardia dataset. [code-link]
- **Alzheimer's Disease Detection using Deep Learning for Deployable Devices** (Python, Current)
Ensemble Deep Learning model
On-going research project on detection of Alzheimer's Disease using gene-expression and image data, and to be compressed using TensorflowLite for quantization.

AWARDS

- Gold medalist at Chinmaya Vidyalaya, Taylors Road for securing first rank in CBSE Grade 12 Computer Science (478/500) 2017-2018