Vishal Nagarajan

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Education

Sri Sivasubramaniya Nadar College of Engineering — Chennai, India
B.E. Computer Science and Engineering, CGPA: 8.55/10.0 (8 semesters) — 2018–Current

Chinmaya Vidyalaya, Taylors Road — Chennai, India
Grade 12 CBSE in Computer Science, Score: 478/500 (95.6%) — 2018

Chinmaya Vidyalaya, Taylors Road — Chennai, India
Grade 10 CBSE, GPA: 10.0/10.0 — 2016

Experience

Solarillion Foundation — Chennai, India
Undergraduate Research Assistant — June 2020–August 2021

- 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

Solarillion Foundation — Chennai, India
Undergraduate Project Assistant — January 2020–April 2020

- Flight Delay Prediction
- Handled different file formats (CSV, JSON, TSV), Data Preprocessing and Feature Extraction, Basic Data Visualization using Matplotlib and Seaborn

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 — June 2020–Current
  Teaching Assistant for 5 students through orientation assignment phase containing Python and Machine Learning Basics, and orientation phase

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, Angular, React, MongoDB
- **Languages:** Python, C, C++, Java, SHELL, HTML, JavaScript, SQL, TypeScript
- **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]

- **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