Vinay S. Patil
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EDUCATION

Carnegie Mellon University (CMU) — Pittsburgh, PA
Master of Science in Electrical and Computer Engineering — May 2022
Selected Coursework: [Machine Learning, Deep Learning, Computer Vision]
CGPA: 3.6/4.0

Ramrao Adik Institute of Technology (RAIT) — Mumbai, Maharashtra, India
Bachelor of Technology in Computer Engineering — August 2018
CGPA: 8.82/10 | 3.8/4.0

SKILLS

Programming languages: Java, Python, Angular, React, R
Framework & Platforms: Git, Maven, Numpy, Scikit-learn, Pytorch, Pandas, Tensorflow, IBM MQ, Kafka, Qiskit
Database: MySQL, MongoDB

PROFESSIONAL EXPERIENCE

Carnegie Mellon University — Pittsburgh, PA
Research Assistant — February 2021 – Present
- Worked on designing efficient printed circuit board design optimized to minimize IR-drop across the board
- Implemented evolutionary algorithm combined with deep network and metaballs to improvise A* based baseline solution. Which reduced execution time by 50% and improved the convergence rate
- Collaborated in experiments by adding PCB designs and performed a comparative study of A* and new approach

J P MORGAN CHASE & CO. — Mumbai, Maharashtra, India
Software Engineer class II — July 2018 – January 2021
- Developed a generic solution that reduced on-boarding and logistic time needed for new clients from week to 2 days.
- Upgraded core transformation engine to support advance data formats such as proto amps and Json which saved manual coding, code replication and reduced the development time from 2 sprints work effort to 3 days
- Trained three new joiners in the team, by introducing and helping out with technical details of the project
- Received Q4-2018 (Excellent performing new joiner) and Q2-2019 (Excellent performer in the team) awards

Precision AutoWorkz — Mumbai, Maharashtra, India
Intern- Software Engineer — December 2016 – January 2017
- Digitalized automobile assembly shop the system allowed to generate reports, bills and track assembly orders
- Reduced customer support queries by 70% and allowed customers to get accurate time and cost estimates
- Designed intelligent ordering system that reduced 60% storage space and reduced wastage of old parts

PROJECTS

Quantum Image Classifier — Pittsburgh, PA
Carnegie Mellon University — October 2021 – December 2021
- Implemented image classifier based on quantum hadamard edge detection with the quantum image encoding
- Experimented on various quantum devices like Dwave, Qiskit, and simulators from amazon brackets.

Object Tracking in Videos — Pittsburgh, PA
Carnegie Mellon University — October 2021 – December 2021
- Implemented Lucas-Kandae optical flow detection to detect and track selected objects from the video
- Improvised implementation by handling anomalies using a combination of Matthew-baker and Lucas-Kanade method

Deep Network Compression — Pittsburgh, PA
Carnegie Mellon University — February 2021 – March 2021
- Implemented deep network compression using combination of quantization and compression achieving 20 times compression with a minimal drop of accuracy.
- Performed quantitative analysis on the baseline and compressed network using AlexNet, ResNet and VGG16
- Reduced memory footprint by 5% from new compression technique compared to a baseline model

Language Model — Pittsburgh, PA
Carnegie Mellon University — February 2021 – March 2021
- Implemented a Recurrent Neural Network(RNN) trained to predict the next words learning the previous words

Muktangan — Mumbai, Maharashtra, India
Muktangan NGO — November 2018 – July 2019
- Reorganized school systems operated under NGO with solution to track student progress and teacher's appraisal
- Provided daily/weekly/monthly intelligent report system which help NGO to predict funding and resources logistic

Determine Document Relevance using Keyword Extraction (DDRKE) — Mumbai, Maharashtra, India
Ramrao Adik Institute of Technology — August 2017 – July 2018
- Implemented a 3-stage search engine to scan-analyze-use the document, designed based on term frequency-inverse document frequency algorithm
- Published research paper addressing solutions to three anomalies in IRJET Journal **[ref: P-ISSN: 2395-0072]**

ADDITIONAL EXPERIENCE OR AWARDS/HONORS OR VOLUNTEER WORK

- Volunteered as **Subject Matter Expert** for Java & Android in 'Code For Good' hackathon held by J P Morgan in 2020
- **Runner-up** in Algorithm 3.0 hackathon; designed Android and web app for technical farmer