

## Vinay S. Patil

[vspatil@andrew.cmu.edu](mailto:vspatil@andrew.cmu.edu) | (412) 478-3259 | [www.linkedin.com/in/vspatil173](https://www.linkedin.com/in/vspatil173) | <https://vinayp173.github.io/Portfolio/>

---

### EDUCATION

#### Carnegie Mellon University (CMU)

Master of Science in Electrical and Computer Engineering

Selected Coursework: [Machine Learning, Deep Learning]

Pittsburgh, PA

May 2022

#### Ramrao Adik Institute of Technology (RAIT)

Bachelor of Technology in Computer Engineering

CGPA: 8.82/10 | 3.8/4

Mumbai, Maharashtra, India

August 2018

---

### SKILLS

Programming languages: Java, Python, Angular, React

Framework & Platforms : Git, Maven, Numpy, Scikit-learn, Pytorch, Pandas, Tensorflow, AWS ec2, IBM MQ, Kafka

Database: MySQL, MongoDB

---

### PROFESSIONAL EXPERIENCE

#### Research Assistant

Carnegie Mellon University

Pittsburgh, PA

February 2021 – Present

- Researching efficient PCB designs to minimize IR-Drop using Deep Networks and Evolutionary Algorithm
- Developed solution using metaballs and radial basis function combined with Genetic Algorithm which improved accuracy of PCB designs and also reduced execution time compare to old A\*-based solution by 50%

#### J P MORGAN CHASE & CO.

Software Engineer class II

Mumbai, Maharashtra, India

July 2018 – January 2021

- Collaborated with senior engineers and product owners to create smart solutions for trade instruction capture
- Developed a generic solution that will support multiple clients with minimal efforts, this reduced on-boarding and logistic time needed for new clients from few days to one day
- 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 within the team of instruction capture space

#### Precision AutoWorkz

Intern- Software Engineer

Mumbai, Maharashtra, India

December 2016 – January 2017

- Modernized an automobile assembly shop with a digital solution using this system it was able to report the exact phase of all assembly jobs. It enabled users to trace the estimates and cost in real-time, which reduced the customer support needed from shop by 70%
- Optimized the inventory management which can be determined by storage space and number of unused parts, with an intelligent ordering system that reduced 60% of storage space need and reduced wastage of old parts

---

### PROJECTS

#### Deep Network Compression

Carnegie Mellon University

Pittsburgh, PA

February 2021 – March 2021

- Implemented AlexNet, ResNet, VGG16 deep networks and applied unique combination of quantization and compression achieving 20 times compressed model with minimal drop in accuracy
- Performed quantitative analysis against baseline and SNIP model with various compression rates and found new model to be efficient and lighter in memory footprint by 5%

#### Muktangan

Muktangan NGO

Mumbai, Maharashtra, India

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)

Ramrao Adik Institute of Technology

Mumbai, Maharashtra, India

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
- Improved the algorithm to solve its three anomalies, had published research paper for same in IRJET Journal with 7.52 impact [ref: P-ISSN: 2395-0072]
- Built a chatbot to intelligently answer the questions based on a ranking system and extracted keyword knowledge from the documents

---

### LEADERSHIP

**Volunteer;** GoodWorks – J P Morgan Chase; Mumbai, Maharashtra, India

November 2018 – January 2019

**Technical Team Member;** CSI-RAIT; Mumbai, Maharashtra, India

September 2016 – July 2018

**Event Head;** CSI-RAIT; Mumbai, Maharashtra, India

September 2016 – October 2016

---

### 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
- Earned 6 stars in Problem solving section of Hacker-rank