

# Parth Vipul Shah

<https://parthvshah.me>

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## EDUCATION

### University of Southern California

*Master of Science in Computer Science*

Los Angeles, CA

*Jan 2022 - Dec 2023*

### PES University

*Bachelor of Engineering in Computer Science and Engineering; GPA: 3.62 (9.06/10.0)*

Bangalore, India

*Aug 2017 - Jul 2021*

## EXPERIENCE

### • Commvault Systems

Bangalore, India

*Associate Software Engineer*

*Jan 2021–Present*

- **Databases:** Solely responsible for the development of the PostgreSQL data agent. Enabled protection of on-prem and cloud (AWS, Azure, GCP) PostgreSQL databases for **25+** customers by working on **90+** enhancements and defects. Worked on a wide array of features like multi-stream file system/dump based backups and restores, snap/volume based backups and restores, table level restores and block level backups. Highest score for a fresher in two consecutive quarterly performance reviews.

### • Samsung R&D Institute

Bangalore, India

*Student Trainee*

*Summer of 2020*

- **On Device AI:** Research and development of a deep learning model using TensorFlow to improve user experience. Processed raw handset images to accurately determine ambient temperature and intelligently detect device overheating. Average RMSE of **3.79** for single image prediction using a CNN and **2.32** for multi image prediction using an LSTM. Successfully completed POC.

### • SSCU, Indian Institute of Science (IISc)

Bangalore, India

*Project Intern*

*Summer of 2019–May 2020*

- **Parallel Computing:** Developed 3 fast algorithms for computing general correlation functions. Used the Message Passing Interface standard in C. Achieved **superlinear speedups** for the most efficient algorithm given a set of simulation parameters. Deployed package on a **120** node HPC cluster. Excelled in an academic research lab setting.

### • PES University

Bangalore, India

*Teaching Assistant and Coding Division Head*

*Jun 2018–Dec 2020*

- **Teaching Assistant - Introduction to Big Data:** Designed, developed and operated an online assignment submission portal that handled submissions from **300+** students and auto evaluated the same. Secure, scalable and feature rich portal written in React and Javascript.
- **Coding Division Head - The Alcoding Club:** Designed and developed a portal using the MERN stack for the CSE department. Used for assignment evaluation, contest ranking, online judging. Beta tested by **800+** students. Coordinated multiple software development projects and hosted an inter-collegiate competitive coding contest with **50+** teams.

## RESEARCH AND PROJECTS

- **Prediction of the Peak, Effect of Intervention and Total Infected by the Coronavirus Disease in India:** Used the SEIR compartmental model. **3 citations**. Published in the Disaster Medicine and Public Health Preparedness (Cambridge University Press) journal. [doi.org/10.1017/dmp.2020.321](https://doi.org/10.1017/dmp.2020.321)
- **Converting Black-box Neural Networks into Interpretable Decision Trees, Explainable AI:** Used layer-wise relevance propagation and perturbations. Methods were model and data agnostic.
- **Naturalization of Text by the Insertion of Pauses and Filler Words:** Naturalized text using the frequency of bigrams and a Recurrent Neural Network.
- **Database as a Service:** Used Docker, RabbitMQ, ZooKeeper. High availability and scalability. Deployed on AWS. **100%** uptime and supported **500+** concurrent reads/writes.
- **Ethereum Smart Contracts in Solidity:** Deployed smart contracts onto the blockchain for an ERC-20 token and an escrow for a universal exchange. Test driven development.

## SKILLS

- **Languages:** C/C++, Python, Javascript, HTML/CSS, SQL, Solidity
- **Technologies:** React, Node, MongoDB, Django, Git, PostgreSQL, TensorFlow, Docker, AWS, GCP