Parth SHAH

+91 9538 794 906
@ parthvshah@gmail.com
in linkedin.com/in/parthvshah
github.com/parthvshah

EDUCATION

PES University, Bangalore | Bachelor in Technology, Computer Science & Engineering | 2017 - 2021 | CGPA : 9.06

Courses	Data Structures, Design and Analysis of Algorithms, Advanced Algorithms, Operating Systems, Computer Networks, Database Management Systems, Linear Algebra, Machine Learning, Artificial Intelligence, Natural Language Processing, Introduction to Data Science, Object Oriented Modelling and Design, Software Engineering, Algorithms for Information Retrieval, Web Technologies, Cloud Computing, Digital Design and Computer Organization, Microprocessor and Computer Architecture, Introduction to Blockchain Technology, Probability Modelling, Secured Programming with C
Languages	C/C++, Python, JavaScript, HTML/CSS, SQL
Tools & Technologies	React, Node, MongoDB, Django, Git, PostgreSQL, TensorFlow, Docker, AWS, GCP, Git, LaTeX

EXPERIENCE

Present
Jan 2021

Software Engineer, DATABASES - UNIX, Commvault, Bangalore
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, block level backups and restores and table level restores.

Dec 2020
Aug 2020

Teaching Assistant, INTRODUCTION TO BIG DATA, CS&E Department, PES University, Bangalore
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.

Summer of 2020

Student Trainee, SYSTEM INTELLIGENCE, ON DEVICE AI, Samsung R&D Institute, Bangalore
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.

May 2020
Summer of 2019

Project Intern, SOLID STATE & STRUCTURAL CHEMISTRY UNIT, IISc, Bangalore
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.

Dec 2019
Jun 2018

Coding Division Head, THE ALCODING CLUB, CS&E Department, PES University, Bangalore
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.

Summer of 2018

Software Developer Intern, HEADRUN TECHNOLOGIES PVT. LTD., Bangalore
Used the Django framework to build responsive websites for a Finance startup in Ireland, **PayLabs** and a social media analysis tool in India, **Buzzinga**. Integrated several third party solutions like HubSpot for existing projects to better enable sales teams.

Publications, Research and Projects

Prediction of the Peak, Effect of Intervention and Total Infected by the Coronavirus Disease in India Mar 2020 - Apr 2020

Studied the effect of the coronavirus disease 2019 (COVID-19) in India using the SEIR compartmental model in hopes of aiding Indian legislators make crucial policy decisions. Accepted for publication in the Disaster Medicine and Public Health Preparedness (Cambridge University Press) journal. **3 citations. DOI : doi.org/10.1017/dmp.2020.321**

Interpreting Neural Networks, Explainable Artificial Intelligence (XAI) Aug 2020 - Jan 2021

Developing methods to convert black-box neural networks into an interpretable decision trees using Layerwise Relevance Propagation and perturbations by capturing relevance locality in the hidden layers. Methods are model and data agnostic.

Naturalization of Text by the Insertion of Pauses and Filler Words Jan 2020 - Sept 2020

Developed a set of methods to naturalize text. Used the frequency of bigrams in the training data to make appropriate insertions and a Recurrent Neural Network to predict the next word that must be inserted in an input sentence. Resources are available at this **link.**

Database as a Service May 2020

Built a database as a service using Docker, RabbitMQ, ZooKeeper. High availability and scalability were ensured. The database served was of the NoSQL type (MongoDB). The service was deployed on AWS using EC2 instances. Resources are available at this **link.**

Lisp Mini Compiler in C++ Jan 2020 - Apr 2020

Built a mini compiler for Lisp (limited constructs such as if, for, while) in C++. High level Lisp code was converted to MIPS assembly level code by passing through three stages and an optimization stage. Resources are available at this **link.**

Analysis of Fibonacci Heaps Dec 2019

Bench-marked a Fibonacci Heap against a simple Binary Heap. Simulation of process scheduling and implementation of Dijkstra's algorithm using both. Resources are available at this **link.**

Parallel Implementation and Bench-marking of Prim's Algorithm May 2019

Aimed to benchmark a parallel implementation of Prim's algorithm against a sequential implementation using OpenMP. Prim's algorithm finds the minimum spanning tree for a weighted, undirected graph. Resources are available at this **link.**

Subject Matter Expert, PESU I/O, PES University Oct 2018 - Nov 2018

Instructed a four week course on Source Control and Programming Principles as part of a unique peer-to-peer learning system, where students interact with Subject Matter Experts. Students were coached using group discussions and projects. Resources are available at this **link.**

Advertisement Free Radio, HashCode, Microsoft Innovation Lab Nov 2017

Designed an application that overlays advertisements in a radio live stream of with the users' favourite tracks for uninterrupted listening. Won third place in a 24 hour hackathon.

Evaluation of Speech Engines for use in Air Traffic Control, EEE Department, PES University Oct 2017 - Nov 2018

Evaluated Automatic Speech Recognition (ASR) technologies for adoption in Air Traffic Control simulators. Conducted research on pilot communication. Worked on state management and error handling and developed test cases. Conference paper at this **link.**

Awards, Extracurricular Activities and Volunteering

Awards

C.N.R. Rao Merit Scholarship - Top 20% (2019, 2020) | Sunanda Naganand Award for Best Outgoing Student (2016) | Vinay Uttappa Memorial Award for Best All Round Performance (2016)

Extracurricular Activities

Head of Finance - Model United Nations Society (2019) | Core Member - Epsilon Science Fest - PES University (2018) | Delegate - Model United Nations (2013-2018) | Robotics - FIRST LEGO League & Indian Robotics Olympiad (2013-2015)

Volunteering

Content Creator - Parikrama Foundation (2019) | Primary School English Teacher (Assistant) - BGMS Shishukunj Vidyalaya (2018)

Formation

2015	-	2017	Central Board for Secondary Education	National Public School, Koramangala	Vice Captain	96%
2005	-	2015	Indian Certificate for Secondary Education	Sishu Griha Montessori & High School	Head Boy	94%