SHUBHAM PANDEY

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Education

Master of Science in Computer Science   **University of California, Davis**   **GPA: 3.8/4.00**   June 2021
- Machine Learning, Distributed Systems, Design of Algorithms, Operating Systems, Applications of Graph Theory
- Programming Languages, Linear Algebra

Bachelor of Science in Computer Science   **VIT, Vellore**   **GPA: 3.74/4.00**   April 2018
- Operating Systems, Computer Networks, Data Structures, Algorithm Design and Analysis, Cell Biology, Molecular Biology

Work Experience

Software Engineer   **Cisco Systems, San Jose**   July 2021 - Present
- Working on **RRM algorithms**, **YANG models**, **NETCONF** and **RPCs** for AI Enhanced RRM on Cisco's 9800 Wireless Controllers
- Enhancing existing ML models for better Network Insights and Recommendations to improve network performance
- Enhanced **Coverage Hole Detection** with new **802.11k** which reduces unnecessary Transmit Power increase of Access Points
- Developing new features on **AWS Cloud** to support backend of AI Enhanced RRM
- Developing TSIM/ASIM Access Point and Client simulators for end to end scale testing AI-RRM
- Tech Stack: **C/C++, GDB, Python, PySpark, SQL, GraphQL, AWS, S3, RDS, Machine Learning**

Data Engineer Intern   **SpringML, Pleasanton**   March 2020 – June 2021
- Designed views and tables from **Firestore** to interface with Get Vaccinated Oregon User Interface
- Apply various data transformation, aggregation and wrangling techniques to ensure data is made available for further analysis
- Tech Stack: **Google Cloud Platform, Big Query, SQL, Python**

Graduate Student Researcher   **Exploratory Systems Lab, Davis**   March 2021 – June 2021
- Led the Research of **RDMA** based Communication Layer for **ResilientDB**, an open-source permissioned blockchain fabric
- Developed a **scalable**, **multithreaded** mechanism improving communication speeds 6x using **RDMA** Operations vs **TCP/IP**
- Developed secure, scalable and high performance consensus algorithm based on Secure Computing, Trusted Enclaves
- Tech Stack: **C/C++, Bash, Python, Singularity, GDB, Infiniband, Intel SGX, AWS**

Graduate Software Engineer   **Mercedes Benz Research and Development, Bangalore**   August 2018 - July 2019
- Designed and developed **MAVEN** based testing framework for Vehicle Diagnosis android application and managed versions of the **Automated Quality Assurance (QA) framework** on **GIT**
- Successfully automated over 70% user test scenarios which decreased dependency on manual QA before application release
- Tech Stack: **Java, Python, Appium, Selenium, GIT, Android Studio**

Publications and Achievements

- **Winner**: 2022 Cisco Hackathon for **Best Digital Solution**
- **Dissecting BFT Consensus: In Trusted Components we Trust!**
  Gupta, S., Rahnama, S., **Pandey, S**., Crooks, N. and Sadoghi, M., 2022.

Academic Projects

Freebites | Full Stack | Tech Stack: **JavaScript, React Native, Python, Azure, SQL**
- A React Native based application for Android and iOS platforms for Free Food Availability Notifications in California

Implementation of BFT-SMaRt's VP-Consensus on ResilientDB Blockchain Fabric | Systems | Tech Stack: **C++, Bash, Python**
- Collaborated with a team of four and implemented a modified Paxos based Consensus protocol '**VP-Consensus**' in **ResilientDB**'s multithreaded and deeply pipelined architecture

Deep Q-Learning | Machine Learning | Tech Stack: **Python, Pytorch, Matplotlib**
- Movie recommendation by **Collaborative Filtering** and **Spectral Clustering** methods on a highly sparse, Netflix movie ratings dataset. Singular Value Decomposition (**SVD**) was used to predict ratings for movies for any user in the dataset