PRANAV DANI

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EDUCATION

SUNY – Stony Brook University · Aug 2023 - May 2025
Master of Science, Computer Science · *New York, USA*

- Coursework: Distributed Systems, Operating Systems, Computer Architecture, Theory of Databases, System Security
- Teaching Assistant: (CSE - 316) Fundamentals of Software Development

University of Mumbai – Thadomal Shahani Engineering College · Aug 2019 - May 2023
Bachelor of Engineering, Information Technology · *Mumbai, India*

- Courses: Operating Systems, Database Management, Data Structure and Analysis, Computer Network And Network Design, Network Security, Computer Organization and Architecture, Data Mining and Business Intelligence

SKILLS

Languages and Frameworks: C, C++, Python, Java, React.js, Node.js (Express.js), Flask, HTML, CSS, JS
Technologies: Git, Figma, GitHub Actions, PostgreSQL, Hadoop, Spark, Firebase, Heroku

EXPERIENCE

Suven Consultants · Jun 2021 – Aug 2021
Software Intern · *Mumbai, India*

- Collaborated on two Open Source Java projects: Home Inventory and Loan Management tool.
- Developed a feature using **Printable interface** to generate printable reports in PDF format using **Java AWT and Graphics Library**.
- Used SQLite3, JavaFX, and Java Swing components.

PROJECTS AND RESEARCH

Improving File System syscall performance on XV6 | *C, qemu* · Mar 2024 – May 2024

- Engineered **asynchronous disk logging protocol**, enhancing the write efficiency, resulting in a **94% latency reduction**.
- Introduced small file support with file type conversion handling. Resulted in a **reduction of 29% and 91% disk IO** requests with unchanged logging and new logging protocol respectively.
- Added **ftruncate() syscall** for file truncation and seamless transition between "small" and regular files.

Fault Tolerant Sharded Key-Value Store With Transactions using Raft | *C++* · Aug 2023 – Dec 2023

- Created a **persistent linearizable key-value store** utilizing the **Raft consensus algorithm** for leader election and data replication in an **asynchronous environment**. Implemented **log compaction** with **Snapshots**.
- Engineered **sharding** using **consistent hashing**, ensuring efficient data distribution across nodes. Automated **partition rebalancing** during node joins and departures.
- Implemented a **versioned key-value store** that supports **cross-shard Transactions** using **2-Phase Locking** and **2-Phase Commit** with **Optimistic Concurrency Control**.

BackGen - Backend Generator | *ICT4SD* | *Springer* · Aug 2023

- Developed a software tool that **automates** the process of writing **backend code** for web applications.
- Creates a structure for data models and **RESTful API endpoints**, and generates executable code for the same in Golang.
- Generates approximately 48% of the code. (Result evaluated for creating a backend for a simple Todo application.)

Short-Terms | *NLP, HTML, CSS, JS, Python, FastAPI, Beautiful Soup* | GitHub · Jan 2022 – Apr 2022

- Designed and implemented a **browser extension** (Manifest 3.0) to **summarize website content** with a single click.
- Leveraged **Beautiful Soup** for efficient page parsing and utilized **FastAPI** to handle requests from the extension.
- Incorporated NLP techniques through **Spacy** to optimize text summaries while preserving essential meaning.

Maa-Sampati Marble and Granites | *React.js, CSS, TypeScript, Firebase, Flutter* | GitHub · Jul 2021 – Oct 2021

- Architected an easy-to-use **E-commerce platform** for creating Granites and Marble quotations using React.js.
- Utilized REST APIs in the web app to interact with Firebase for storing orders.

Expense Tracker | *Flask, PostgreSQL, Heroku, HTML, CSS, JS* | GitHub · Apr 2021 – Jun 2021

- Designed and built a web app for recording and **managing personal expenses** with support for creating bulk expenses and **exporting user data in CSV and Excel formats** using Flask and PostgreSQL and hosted on Heroku.
- Provides the functionality to create **personalized budgets** based on multiple categories.

EXTRACURRICULAR ACTIVITY

Our Tech Community (OTC) | ourtech.community | *Admin* · May 2022 - present

- Hosted 200+ hours of weekly OTC CatchUp sessions, organized two in-person OTC MeetUp event with 60+ attendees.