

Saurabh Raut

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EDUCATION

University of Pennsylvania (UPenn)

Master of Science in Engineering - Computer and Information Science

Philadelphia, USA

May 2023

Veermata Jijabai Technological Institute (VJTI)

Bachelor of Technology in Computer and Information Science

Mumbai, India

May 2021

INTERNSHIPS

Amazon Music (Software Development Engineer)

May 2022 – August 2022

- Designed, implemented and deployed a caching framework for Amazon Music's 3P evaluation framework
- Extensively used CDK and AWS tools like Lambda, S3, SQS and DynamoDB for implementing the cache

Barclays Investment Bank (Software Development Engineer)

June 2020 – July 2020

- Automated testing of Barclays trade application - BATMAN by using Barclays Automation Test Harness System(BATHS) and testNG framework

Silicon Veins (Android Developer)

May 2019 – June 2019

- Built custom Share View replacing the built-in Android chooser for BizAnalyst app. This feature lets users directly share app data to mobile numbers on the ledger through Whatsapp without saving the number in their contacts
- Set up passcode activity, floating action button and other UI related features for the app

SELECTED PROJECTS

Penn Search - Distributed Search Engine | *Java, AWS tools*

April 2022 – May 2022

- Built a completely distributed search engine consisting of Web Crawler, Indexer, Page Ranker, & an interactive UI
- Crawled more than 1 million web pages using StormLite, a lightweight version of Apache Storm, running on EC2 instances. SQS was used as a crawl frontier and the crawled pages were stored in a S3 bucket
- Indexed and ranked the crawled pages as Hadoop MapReduce tasks and handled search queries from user using self-built version of Apache Spark

Penn Cloud | *C++, HTML, CSS*

Nov 2021 – Dec 2021

- Built a cloud platform that supports web-mail service and storage service analogous to Gmail and Google Drive
- Storage was based on distributed key-value store (similar to Bigtable) and factors like load balancing, fault tolerance, replication, consistency were taken into consideration as well

Chat Server | *C++*

Oct 2021 - Nov 2021

- Built a replicated chat server that uses User Datagram Protocol (UDP) to multicast chat messages
- The server supports three different ordering modes: unordered, FIFO, and total ordered multicast

Emotion Analysis of Movie Characters | *Scikit-learn, PyTorch, Pandas*

Nov 2021 - Dec 2021

- Performed scene wise emotion analysis of movie characters based on their dialogues in the script
- Trained and tested a few linear and non-linear models and found that a simple MLP (Multi-Layer Perceptron) model with BERT embeddings generated best results

Content Labelling of Hidden Services | *Gensim, NetworkX*

Jan 2021 – May 2021

- Classified the darknet data into topics using two different approaches - Topic Modelling and Graph of Words
- Co-authored a peer-reviewed paper that was published in Dark Web Pattern Recognition and Crime Analysis Using Machine Intelligence - IGI Global

RELEVANT COURSEWORK

Software Systems, Internet and Web Systems, Applied Machine Learning, Principles of Deep Learning, Linear Algebra and Optimization, Database and Information Systems, Analysis of Algorithms, Engineering Negotiation, Data Structures & Algorithms, Discrete mathematics

TECHNICAL SKILLS

Languages: Java, C/C++, Python, TypeScript, SQL, Latex

Frameworks & Software: MongoDB, Neo4j, TestNG, Scikit-learn, Numpy, Pandas, Hadoop MapReduce, Apache Spark

Development Tools: CDK, AWS (RDS, DynamoDB, S3, SQS, EC2, Lambda), Android Studio, Git