Raj

Website • GitHub • LinkedIn • rajgoesout@gmail.com

EDUCATION

Jamia Hamdard University, Delhi, India — Jul 2017 – Jul 2021

- B.Tech, Computer Science. CGPA: 9.06/10
  - Relevant Coursework: Database Management Systems, Algorithms, Distributed Computing, Formal Languages & Automata Theory, Compiler Design, Operating System, Computer Networks, Discrete Mathematics.

WORK EXPERIENCE

BUIDL Labs | Delhi, India — Jul 2020 – Present

- Lead Engineer, *DataStation*
  - Reduced information asymmetry in the Filecoin network by simplifying storage provider stats.
  - Developed a transaction history processor, earnings aggregator and future earnings prediction system for Filecoin miners (*codebase*, *devgrant proposal*). Wrote a *chain indexer* to fetch relevant data.
  - Implemented wallet-based authentication.
  - Onboarded miners and performed beta testing.
- Blockchain Engineer | Researcher
  - Built a decentralized video streaming API using Livepeer (video transcoding) & Filecoin (p2p storage): *file.video*.
  - Developed a method to perform forensic watermarking of videos using GANs (generative adversarial networks), and then perform transcoding in the livepeer network. This lets us achieve significantly low transcoding costs, and simultaneously prevent piracy of content (decentralized DRM).
  - Explored blockchain interoperability (Chainbridge, XClaim, Cosmos).

MacPorts, Google Summer of Code | Remote — May 2019 – Aug 2019

- Student Developer
  - Ported MacPorts *Buildbot* (CI/CD) Infrastructure from version 0.8 to 2.x.
  - Developed a custom views *plugin* for Buildbot that enables writing UI components in modern frameworks like Vue/React.js instead of Angular.js (which is supported in Buildbot by default). Wrote custom views using this plugin.
  - Developed new features in Buildbot and made it scalable for large instances (support > 25k builds at once): *commits*.
  - Packaged and maintained ports related to Buildbot.

RELEVANT PROJECTS

ScholarDAO, Democratize Research

- Designed a protocol for decentralized, autonomous publishing of scientific research using a peer-review system, reputation system of scientists, and citations indexer. Added ownership and funding mechanisms using NFTs.
- Developed a *subgraph* to keep track of citations and H-Index of scientists.
- Introduced incentives to prevent Sybil attacks.
- Wrote a Chainlink *External Adapter* to verify identity of actors.

DeCrowdfund, Decentralized Crowdfunding Campaigns

- Solidity smart contracts to start decentralized crowdfunding campaigns.
- Store campaigns data in IPFS.
- Verification of campaign proofs done by backers (eg: medical reports/bills).

DockerGen, Automated Containerization Software

- Performs file and directory analysis on a software project and automatically generates a Dockerfile.
- Developed a supervised learning algorithm based on statistical features that predicts the source programming language of a given project.
- Achieved an accuracy of 70% (22% improvement over an existing, next best approach).

MReco, Movie Recommendation App

- A movie recommender using popularity-based, user-user collaborative filtering, item-item collaborative filtering, and matrix factorization algorithms.
- Scraped data from imdb, stored in a MongoDB collection, and used Flask to build a webapp.

SKILLS

- Languages: Golang, Rust, TypeScript, Solidity, Python, PostgreSQL.
- Technologies: React/Next/Vue.js, Ethers/Web3.js, GraphQL, MongoDB, Redis, RabbitMQ.
- DevOps: AWS, Docker, Buildbot, Nginx.

ACTIVITIES & AWARDS

- *HackFS* - Finalist (top 12 out of 150 teams worldwide) — Aug 2021
- *Mentor*, Google Summer of Code @MacPorts — May 2020 – Aug 2020
- IEEE Student Branch - Taught programming to freshmen and sophomores — Aug 2018 – Oct 2019
- Google India Scholarship (Mobile Dev) - By Udacity & Google — Feb 2018

[*CV compiled on 2024-03-20*]