Ashwin Sekhari

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Education

University of California, Davis — Davis, CA
M.S. (thesis) in Computer Science — Sept 2021 – Present

National Institute of Technology, Rourkela — India
B.Tech in Computer Science and Engineering — Aug 2017 – June 2021

Experience

Graduate Student Researcher — Sept 2021 – Present
University of California, Davis — Advisor: Prof. Prasant Mohapatra — Davis, CA

Engineer - API Server — July 2021 – Aug 2021
Udaan.com — Technology and Product Unit — India

- Improved the health of the API Server (handling 500k requests per minute) at **Udaan.com - India's fastest growing unicorn startup / B2B e-commerce platform.** Identified degradations and abnormal behavior.
- Repaired and migrated several high-traffic APIs (handling 30-40% of total traffic) to **Kotlin Coroutines** and prevented them from blocking the application's main thread which resulted in 20% reduction in latency.

Winner at EtherPunk'21 Hackathon — Jan 2021 - March 2021
DeFlix — Ethereum Based Pay-as-you-watch Streaming Platform — Global

- Developed, as a part of a global Hackathon, a pay-as-you-watch streaming platform along with easy streaming license management using **ERC-721 based Non Fungible Tokens (NFTs).**
- Led a remote cross functional team of three people during the hackathon.
- Won "**Best Application**" title by Superfluid ($1000), and "**1st place**" by Portis ($500).

Internship — May 2020 - July 2020
Stanford University — Rationality in Byzantine Consensus — Stanford, CA

- **Analyzed incentive based attacks in byzantine consensus** and how certain blockchain protocols like FruitChains and Bitcoin-NG prevent selfish mining attacks (compromise the system with $< 50\%$ hashing power).
- Worked on models and methods to achieve fair reward distribution (α probability of winning reward with α fraction of hashing power) in cryptocurrency mining in the presence of adaptive adversaries.
- Scribed and audited for the course Scaling Blockchains taken by Prof. David Tse at Stanford.

Internship — May 2019 - July 2019
University of Waterloo — A Secure Scalable Quantum-Safe Blockchain for Critical Infrastructure — Canada

- Collaborated with Prof. Srinivasan Keshav and implemented a **distributed byzantine fault tolerant Global Membership Service (GMS)** based on RCanopus protocol. System built using Concord-BFT (VMWare).
- **Deployed the service** on University of Waterloo's local compute cluster. Achieved average read latency and write latency of 5-6 ms and 13-16 ms respectively.

Internship — May 2018 - July 2018
IIT Kanpur — Permissioned Blockchains in Land Registry Management — India

- Developed and implemented models to **solve the double spending problem** in the Indian land registration system using Permissioned Blockchains. Worked with Prof. Sandeep Shukla.
- Designed and coded tokens for efficient verification of digitised documents using Merkle trees. **Deployed the system** on 10 servers connected in a permissioned blockchain fashion using Hyperledger Fabric.

Skills

Technical Languages: Python, C/C++, SQL, JavaScript, HTML/CSS, Go, Kotlin
Developer Tools: React, Flask, Git, Docker, Google Cloud Platform (Skill Badges), VS Code, CouchDB, IntelliJ IDEA
Blockchains: Hyperledger Fabric, web3.js, solidity, Truffle, Ganache
Communication: English (fluent), Hindi (native), Punjabi (spoken), Spanish (basic)
Soft Skills: Leadership (Student Mentor (3 years), Technical Lead (Competitive coding club)), Teamwork (Google DSC)

Publications

[1] **Polaris: A Scalable Geo-distributed BFT Consensus Protocol for Blockchains** (working)
[2] **Entangled Blockchains in Land Registry Management** (Feb 2019)

- Presented at *Workshop on Blockchain Technologies and its Applications* at IIT Bombay, India
- Poster at *Advanced School in CSE: Blockchains and Cryptocurrencies* at IIAS, Israel (Dec 2018).