Ashwin Sekhari

CONTACT INFORMATION
Address: Available on request
Phone: Available on request
Website: https://ashsek.me
E-mail: ashwinsekhari@gmail.com

INTERESTS

I am interested in blockchains, network systems, consensus protocols, penetration testing and, sports programming. (GitHub/CodeChef)

EDUCATION

National Institute of Technology (NIT) Rourkela, India 2017 - present
Bachelor of Technology in Computer Science and Engineering - CGPA: 8.51/10

Delhi Public School (DPS), Faridabad, Haryana 2010 - 2017
- AISSE (CBSE Board) [X Grade] - CGPA: 10/10 2015
- AISSCE (CBSE Board) [XII Grade] - Percentage: 93.8% 2017

EXPERIENCE

ITW-20 Nov'20
Currently reviewing a paper for 2020 IEEE Information Theory Workshop (ITW), Riva del Garda, Italy.

IEEE Blockchain 2020 Sept'20
Technical Program Committee: Participated as a reviewer and meta reviewed a paper for Blockchain Technology and its Potential Applications (BTPA 2020) workshop organised under 3rd IEEE International Conference on Blockchain, Greece

Stanford University May'20 - July'20
Virtually worked at Tse labs at Stanford University under Prof. David Tse.

University of Waterloo May'19 - July'19
Worked with Sirius blockchain research group under Prof. Srinivasan Keshav.

Indian Institute of Technology, Bombay (IITB) [SLIDES] [PAPER] Feb'19
Participated and presented a paper at the Third Workshop on Blockchain Technologies and its Applications which was attended by more than 100 participants.

Israel Institute for Advanced Studies, Jerusalem (IIAS) [POSTER] Dec'18
Participated and presented a poster at the 3rd advanced school in computer science and engineering: blockchains and cryptocurrencies which was attended by more than 150 participants.

Indian Institute of Technology, Kanpur (IITK) May'18 - July'18
Student Research Associate at Cyber Security Lab

National Hydroelectric Power Corporation Ltd. Dec'17
Gained exposure to their infrastructure, communication and SCADA system.

KEY PROJECTS

A Secure Scalable Quantum-Safe Blockchain for Critical Infrastructure May'19 - July'19
Supervisor: Prof. Srinivasan Keshav
- Implemented a byzantine fault-tolerant Global Membership Service (GMS) based on the paper RCanopus. It achieves byzantine fault tolerance by leveraging the features provided by Concord-BFT, a generic state machine replication library that can handle malicious (byzantine) replicas.
- Integrated the membership service with RCanopus using Remote Procedure Calls. More implementation as well as functional details about the GMS can be found at Github.
- Explored various aspects of consensus algorithms, formal verification methods, post quantum safety and energy systems through group meetings, research talks and interactions with Professors.

Permissioned Blockchains in Land Registry Management May'18 - July'18
Advisors: Ras Dwidedi, Rohit Negi; Supervisor: Prof. Sandeep K. Shukla (IITK) [Report]
- Developed and implemented models to efficiently translate the current land registration and maintenance system to blockchains. As a result, achieving significant security and transparency in transactions. This was based on "hyperledger-fabric", a framework based on blockchains technology.
- Developed an efficient document verification algorithm for verification of land registry documents which utilizes the concept of cryptography and merkle trees. Hence, enabling us to verify documents without its physical availability with the use of tokens.
- Explored various aspects of cyber security and computer science through research talks and interactions with PhD students, researchers, and Professors.

COURSE PROJECTS

Energy Efficient Container Consolidation in Cloud data Centers 2020
Advisor: Prof. B.D.Sahoo [Undergraduate Thesis]
- Data centers are the backbone of the modern economy and are one of the fastest-growing power consumers. Globally data centers consumed 75 billion kWh of electricity annually, which was equivalent to the output of around 26 medium-sized coal-fired power plants. In order to reduce the impact

of data centres on our environment, I am currently exploring container migration algorithms that focus on energy efficiency.

Analysis of Routing Protocols for Wireless Ad-hoc Sensor Networks 2020
Advisor: Prof. Arun Kumar [Network Simulation Laboratory]

- Worked along with 3 other students to analyse and compare the performance of AODV, DSDV, and DSR routing protocols. They were simulated using NS-3 simulator and compared on essential metrics such as Routing overhead, Average delay, Duplication overhead, Packet delivery ratio, Throughput, and Data delivery cost.

Papers

Entangled Blockchains in Land Registry Management 2019
Co-Authors: Rishav Chatterjee, Ras Dwidedi, Rohit Negi, Sandeep K. Shukla

Achievements

- Achieved team rank 270 out of 1200+ teams at Codechef insomnia 2019
- Ranked 274 in Facebook Hackercup qualification round out of 10,000 participants 2018
- Secured 96 percentile in JEE ADVANCE and 99.6 percentile in JEE MAIN. 2017
- Admitted for undergraduate studies to the computer science department at University College London (UK), University of Edinburgh (UK), and University of Toronto (Canada). 2017
- Achieved AIR 29 in the TECHNOTHLON (conducted by IIT Guwahati). 2016
- Awarded FreeShip (100% scholarship) at Delhi Public School, Faridabad. 2016
- Received appreciation letter for excellence in CBSE examinations from Mrs. Smriti Zubin Irani (former education minister). 2015

Relevant Courses

- Scaling Blockchains at Stanford
- Introduction to Computational Thinking and Data Science*
- Hyperledger Fabric (IBM)*
- Bitcoin and Cryptocurrency Technologies*
- Operating Systems
- Compiler Design
- Object Oriented System Design
- Data Communication
- Linear Algebra
- Discrete Mathematics
- Probability and Statistics
- Data Structure and Algorithms
- Computer Organization and Architecture
- Formal Languages and Automata Theory
- Design and Analysis of Algorithms
- Database Engineering

* MOOC

Skills

Programming Languages - Python (2-3), C++, Go, Solidity, JavaScript
Databases - MySQL, CouchDB, MongoDB
Blockchains - Hyperledger Fabric, Truffle, Ganache, web3.js
Other Tools - Git, LaTeX, Docker, gRPC
Communication - English (Proficient), Hindi (Proficient), Spanish (Basic)

Extra-Curricular

Student Mentor (2020 & '19 & '18) - NIT Rourkela - Tasked with ensuring a seamless transition from home to hostel life for ten freshmen students and addressing their academic, financial, mental and socio-cultural issues to the best of my abilities.

Google Developer Students Club (2020 & '19) - NIT Rourkela - Core Team Member and Blockchain lead of Google Developer Students Club (DSC).

SPAWN (2019) - NIT Rourkela - Technical head for the official competitive coding club of our college, and was tasked with introducing people to sports programming.

NSS Group Leader (2017) - NIT Rourkela - Guided a group of 100 students (along with 3 other group leaders) in completing their activities under National Service Scheme (NSS), India.

Social Work

2020: Delivered a speech on how to improve our immunity during COVID-19 and was awarded an appreciation letter by Central Industrial Security Force, India.

2018 - Participated in a public cleanliness drive and delivered a speech to spread awareness about sanitization among the general public.

2018 - Received an appreciation letter for motivating others during a plantation drive organized by National Hydro Power Corporation, India. Together we planted more than 2000 saplings in a landslide-prone area in India.