

ABHISHEK ALFRED SINGH

SOFTWARE ENGINEER ☎ +1-825-440-9866

◦ DETAILS ◦

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◦ LINKS ◦

[Github](#)

[LinkedIn](#)

◦ SKILLS ◦

Java

GRPC

Golang

Python

SQL (PostgreSQL)

C++

Docker

Git

Linux

Distributed Systems

Database systems

Blockchains

👤 PROFILE

I am a Backend Systems Engineer with experience in building high performance microservices and secure transaction processing systems for data and network management systems. I have been building decentralized data management systems in **Java, Golang, Python and C++** since 2018. In addition to that I have more than five years of experience building high performance middleware systems, and webservices at Nokia (2013-2018).

📁 EMPLOYMENT HISTORY

Research Assistant (Remote) at University of California, Santa Cruz and Irvine

September 2018 — Present

My work involves building research prototypes for decentralized data management systems. I work at the UCI EdgeLab with Prof. Faisal Nawab from the Information Systems Group at UC, Irvine, California. The following is the list of projects I've completed at UCI EdgeLab.

1. TransEdge [*To be published in Proceedings 26th International Conference on Extending Database Technology, (EDBT 2023)*]- fast read-only transaction processing system for a Byzantine fault-tolerant system. Languages and frameworks used: Java, Python, Git, Bash, AWS, RocksDB, Apache Kafka, Git
2. WedgeBlock [*To be published in Proceedings 26th International Conference on Extending Database Technology, (EDBT 2023)*] - fast and secure offchain logging framework for Blockchain systems providing untrusted offchain applications: Languages and frameworks: Python, Solidity, Ethereum Blockchain, Git
3. Clen - secure transaction processing system for a hybrid decentralized system. Languages and frameworks: Golang, Java, Bash, Docker, Python, Flask, Git

Software Engineer at Nokia, Bangalore, India

July 2013 — August 2018

Worked on designing and building high performance middleware for Nokia's network management system. Languages, frameworks and protocols used: Java, Python, Bash, Docker, Corba, SNMP, XML, SOAP, SpringBoot, J2EE, SFTP, SCP, SSL, Agile, Cross platform systems design

🎓 EDUCATION

PhD, Computer Science, University of California, Irvine, Irvine

October 2018 — June 2024

M.S. Computer Science, University of California, Santa Cruz, California

October 2018 — December 2020

M.E. Information Technology, Bangalore University, Bangalore

October 2011 — June 2013

Graduated with Distinction

👥 INTERNSHIPS

○ **Intern Member of Technical Staff - Blockchain Engineering at VMware Inc, Palo Alto, California**

June 2022 — September 2022

I worked with VMware's permissioned blockchain team. My responsibilities were to build a new testing interface for their open source blockchain library called Concord-bft. Languages and Frameworks used: Python, GRPC, Docker, C++, Cmake

○ **Software Engineering Intern at Alcatel-Lucent (Nokia), Bangalore, India**

July 2012 — June 2013

I worked on building prototype protocol conversion API for HNBAP/RANAP to SIP in C++ for Alcatel-Lucent Femtocells. Languages and frameworks used: Perl, Python, Bash, C++, Make

★ **PUBLICATIONS**

○ **TransEdge: Supporting Efficient Read Queries Across Untrusted Edge Nodes**

To appear in Proceedings. 26th International Conference on Extending Database Technology (EDBT 2023), Ioánnina, Greece, March 28-31, 2023

○ **WedgeBlock: An Off-Chain Secure Logging Platform for Blockchain Applications**

To appear in Proceedings. 26th International Conference on Extending Database Technology (EDBT 2023), Ioánnina, Greece, March 28-31, 2023

○ **PeloPartition: Improving Blockchain Resilience to Network Partitioning**

Published in 2022 IEEE Conference on Blockchain (Blockchain)

○ **You've got a Friend in ME (Mobile Edge): Blockchain Processing with Cloud Node Backup**

Published in 2022 IEEE Conference on Blockchain (Blockchain)

○ **Analyzing Soft and Hard Partitions of Global-Scale Blockchain Systems**

Published in 2022 IEEE Conference on Blockchain (Blockchain)

○ **LiftChain: A Scalable Multi-Stage NFT Transaction Protocol**

Published in 2022 IEEE Conference on Blockchain (Blockchain)

○ **WedgeDB: Transaction Processing for Edge Databases, , Santa Cruz, California**

Poster published in the Proceedings of the ACM Symposium on Cloud Computing, 2019

○ **Additional Publications**

Publications in IEEE Conferences - <https://ieeexplore.ieee.org/author/38557615200>