Yogeshwar Murugan

Senior Blockchain Engineer

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Summary

Senior Blockchain Engineer with **over 5 years of production-grade experience** in designing and engineering **decentralized computing technology** with **expertise in Rust programming language**. Sound in **Application and Product engineering**, **Systems Engineering**, **Software Lifecycle, Algorithmic programming**, and mission-critical **Problem-solving** backed by academic training in **Software Engineering** and **Data Science**.

Skills

Rust Lang • Systems Engineering • P2P Networking • Consensus Algorithms • Tokenomics • Blockchain • Logic Programming • Protocol Development • CI/CD • Cloud Deployments • Test-nets releases

Work Experience

Blockchain Engineer

September 2022 – Present

Zenotta AG • Full-time
Remote

Technologies: Rust • Systems Engineering • Logic Programming • Protocol development • LLVM • AWS • Docker • CI/CD

- **Research and development** of the network's Smart Data protocol involving whitepaper development.
- **Designed, implemented, and deployed** high-performant and high throughput networking and blockchain modules from the ground up in Rust, which involves **P2P network engineering, specializing consensus algorithms, multi-threaded systems programming, Network API development and network architecture and optimizations**.
- **Research and development** of the network's **RAFT consensus** algorithm to be **Byzantine Fault Tolerant (BFT).** The network's hybrid and non-trivial architecture demanded a special version of RAFT to be tailored to its needs so that it exhibits BFT characteristics.
- **Spear-headed multiple upgrades and releases** to the network on **AWS** which consequently opened the flood gates for the investors and community to take part in the test-nets. These upgrades primarily focused on **improving the scalability and reliability** of the network **whilst maintaining performance**.
- **Encapsulating and packaging of client-run binaries** into easily scalable, upgradeable, and distributable containers via **Docker** and **bare-metal AWS nodes.** These were used by the investors and community during test-net runs with a high-degree of success supporting multiple platforms.

Full-Stack Engineer: Decentralized Tech

May 2020 – Aug 2022

MaidSafe • Full-time
Remote

Technologies: Rust • Cryptography • Distributed systems architecture • Algorithm development • ELK Stack • Digital Ocean • CI/CD

- **Designed, implemented, tested, and deployed** decentralized networking and cryptocurrency features for the SAFE Network involving **P2P networking, BFT Consensus algorithms, Data distribution and dispersion, Cryptography, and technical aspects of Tokenomics**.
- **Envisioned, implemented, and configured ELK servers and Beat services** for test-nets that are hosted on **Digital Ocean** providing easy readability and **solid insights on the network's stability and efficiency**.
- **Hosted and supported multiple public test-nets** that are prominently used by a **~4000-member strong SAFE Network Community**. **Analyzed and presented insights to issues** that the test-nets face on granular levels and provided resolutions for the upcoming iterations of the Network.

Front-End Library Developer: Decentralized Tech

May 2019 – Apr 2020 • 11 mos.

MaidSafe • **Full-time**

Chennai, India

Technologies: Rust • Distributed systems • Systems programming • Application architecture and development

- Worked on multiple **Client facing libraries,** designing, and implementing **network communication modules and user facing APIs**. Redesigned a **multi-language bindings generator** that **parses native Rust APIs** to generate **FFI** (Foreign Function Interface) bindings for **C, C#, and Java.** This paved way for user of SAFE Network's developer community with various programming language backgrounds to easily use SAFE Network's Client APIs.
- Extensively **researched and implemented multiple flavors of data structures** that are used in the SAFE Network. Various semantics such as **CRDT** (Conflict-free Replicated Data Types), **Versioning** and **Immutability** were incorporated within those types making the network operations more **reliable, fault tolerant and versatile**.

Research Intern

May 2018 – Sep 2018 • 4 mos.

CSIR-CEERI • **Internship**

Chennai, India

Technologies: Python 3.x • MATLAB • Signal processing • Fractal Analysis

CEERI is a constituent laboratory of the **Council of Scientific and Industrial Research** under the **Govt.of India.** Worked as a part of a research team headed by senior scientists on **Fractal Analysis of Heart Rate Variability** which involved **collection and analysis** of approx. **~2000 ECG datasets** with **Python and MATLAB involving multi-Fractal analysis methods** which were later presented to **Samsung Electronics Co. Ltd**. by the organization.

Deep Learning Intern

Dec 2017 – May 2018 • 5 mos.

Nokia • **Internship**

Chennai, India

Technologies: Python 3.x • Tensorflow • Machine learning • Internet of things • Augmented reality

Implemented and delivered multiple machine learning projects, specifically on **Image Recognition** and **Object Detection Models** that aided the IC manufacturing and security teams. Notable projects are **PPE Kit recognition, Emergency exit obstacle detection, and AR machinery detection with an avg. accuracy of 85%.**

Mini-Projects

Real-time Sentiment Analysis and Visualization of tweets using Spark

Oct 2017 – Dec 2017 • 2 mos.

3 coworkers

Technologies: Apache Spark • Maven • Twitter API • ELK

A **Sentiment Analysis Tool** that picks up specified data from Twitter via provided hashtags and analyzes their sentiment. Sentiment for each tweet was calculated based on **AFINN** dictionary and the statistics were **visualized in real-time on a dashboard**. This project was created for **ITMR-HTC, Chennai.**

Voice Bot for Automating Loan Application and Intake

Sep 2017 – Dec 2017 • 3 mos.

3 coworkers

Technologies: RasaNLU • BotKit • AngularJS

A **voice bot designed for automating** loan application and intake processes. Drastically **reduced the man hours** spent doing this manually and the bot was integrated with the organization's website. This project was also created for **ITMR-HTC, Chennai.**

Education

Bachelor's degree: (B.E) Computer Science Engineering

Aug 2015 – May 2019 • 3 yrs. 9 mos.

Sri Venkateswara College of Engineering
Chennai, TAMIL NADU, India
GPA: 7.5/10

High school diploma: Physics, Chemistry and Math

Jun 2013 – May 2015 • 1 yr. 11 mos.

St Patrick's Anglo Indian Higher Secondary School
Chennai, India
Score: 90%

Accolades

- **Share Options** worth of **INR 50lakhs** (as of 22/09/2019) was awarded by **MaidSafe, Ayr, Scotland** under EMI as a recognition of performance during the period worked.
- 2nd Place among 52 contesting teams in an Inter-College Symposium for the project on "**Data Mining and Analysis using Hadoop and Apache Hive**"
- **"Certification of Excellence**" for the project "**Voice bot for Vehicle Loans"** by **ITMR- HTC, Guindy**
- Organized and conducted various events and workshops for "**INTERRUPT 2K17**" **at Sri Venkateswara College of Engineering**

Certifications

Data Analyst Nanodegree - Udacity May 2018