Sanjit Kumar

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EDUCATION

University of Illinois at Urbana-Champaign, *Master of Computer Science* — Aug 2022 – May 2024
3.89/4.00 GPA — Champaign, USA
Relevant Coursework: Distributed Systems, Data Mining, OS Design, Fault Tolerant Systems.

Vellore Institute of Technology, Vellore, *B.Tech Computer Science and Engineering* — Jul 2018 – May 2022
3.87/4.00 GPA — Vellore, India
Relevant Coursework: Algorithms, Social & Information Networks, Artificial Intelligence, Information Security.

PROFESSIONAL EXPERIENCE

Software Engineer Intern, *Aviz Networks Inc.* — May 2023 – Aug 2023 — San Jose, USA
- Designed and developed a highly performant and scalable network analyzer system in C++ that taps packets of high velocity traffic from network fabric of data centers to extract and stream metadata information.
- Leveraged scalable event processing systems like Kafka and Elasticsearch to use the metadata for further analytics. Benchmarked performance on physical network devices with Ixia emulated traffic to test for scalability.

Software Developer Intern, *Zigma Software* — Sep 2021 – Nov 2021 — Erode, India
- Built a weigh-bridge management MERN stack web application for a 'trucks and heavy motor vehicles' weighing company. Programmed a dashboard for visualization of revenue generation metrics and constructed unit tests.
- Coordinated meetings with stakeholders for design and performance feedback and improvement.

Full Stack Developer Intern, *WebKnot Technologies Pvt. Ltd.* — Nov 2020 – Dec 2020 — Bangalore, India
- Integrated custom Tensorflow object detection models with Shinobi, a open source CCTV framework.
- Developed web pages with ReactJS and REST API with node.js and Express.js for two different MERN stack applications for local businesses in Bangalore.

SKILLS

Languages (Python, Java, C, C++) | **Web Development** (ReactJS, Node.js, Express.js, PHP, HTML/CSS)

Database Management (MySQL, MongoDB, Elasticsearch) | **DevOps** (AWS, Bash, Docker)

Systems Programming (Linux Kernel, Sockets, Hadoop, Apache Kafka, Distributed Systems) | **Version Control** (Git, Github)

Machine Learning (TensorFlow, PyTorch) | **Computer Graphics** (OpenGL, WebGL)

PROJECTS

Distributed ML Job Scheduler System
- Designed a distributed job scheduler system for ML inference tasks built on top of 10 Linux VMs from scratch using Java and Python.
- Includes a distributed data logging service, distributed group membership protocol and failure detector, a distributed files system and a real-time work scheduling algorithm to optimize query rate for ResNet and ImageNet classification tasks.

Yarn Inventory Manager
- MERN Stack web application that works as a website/catalogue for a yarn trading entity in Erode, TN, India to receive business inquiries for products. Data collected is used to create visualizations for business intelligence.
- Also designed and developed an alternative JavaFX frontend .

MapReduce Simulation
- An application to leverage the popular Google Map Reduce algorithm for computation intensive tasks in an emulated distributed async environment using multiple docker processes with randomized delays.
- Performance comparisons made for single threaded execution against parallel map reduce jobs.

ORGANIZATIONS

Journalism Club, *Tech and Media Board Member* — Feb 2020 – Jan 2021
- Worked with a team of 6 to move the literature club's newsletter segment (The Weekly Edge) online.
- Developed and launched a full scale MERN stack web app that facilitated writing, editing and publishing articles by club members. Tracked and increased reader traffic by 40%.

PUBLICATIONS AND PRIZES

Best Ethereum Project & Best Dyte Powered Project, *DevSpace Hackathon, Computer Society of India, VIT* — Mar 2021
Developed a prototype for a fundraising platform (called WildSprint) that accepts ETH using Solidity, ReactJS, Dyte and Node.js to advocate for wildlife preservation using crypto crowdfunding.

Internet of Things Security: Attacks, Solutions, Strengths and Limitations, Sep 2021

International Conference on Artificial Intelligence and Machine Vision, IEEE

Presented a comparative analysis of benchmarks between latest security frameworks in recent IoT literature while advised by Dr. Anil Kumar Kakelli.