

# Sanjit Kumar

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## EDUCATION

**University of Illinois at Urbana-Champaign, Master of Computer Science** ☑  
3.89/4.00 GPA

Aug 2022 – May 2024  
Champaign, USA

**Vellore Institute of Technology, Vellore, B.Tech Computer Science and Engineering**  
9.23/10.00 GPA

Jul 2018 – May 2022  
Vellore, India

## SKILLS

**Languages** (Python, Java, C, C++) • **Web Development** (ReactJS, Node.js, Express.js, PHP, HTML/CSS)  
**Mobile Development** (React Native, Expo) • **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)

## PROFESSIONAL EXPERIENCE

**Fall Software Engineer Intern, Aviz Networks Inc.** ☑

Sep 2023 – Nov 2023  
San Jose, USA

- Developed and integrated a web UI, REST API, and Redis DB Cache for a DPDK Network Packet Collector.
- Performance tuned high throughput low latency network packet collector pipeline by batching packet payload to improve single packet processing time by 50%.
- Automated the configuration, build and execution of the packet collector with Bash scripts and Python.

**Summer 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 for further analytics.
- Benchmarked performance on physical network devices with Python based- and Ixia- network load generator to test for scalability.
- Enhanced the collector to enable streamlined packet filtering and destination selection via an REST API.

**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 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.

## PROJECTS

**Android Task Manager for Textile Industry**

- Built a React Native Android application using Expo (cross platform mobile development) to create and manage work assignments in textile firms.
- Deployed as a cloud application hosted on AWS EC2 using S3 with Mongo Atlas as data storage layer.
- Used OpenTelemetry Collector to centralize metrics from the client to Prometheus and Grafana to derive performance insights.
- Performance tuned for efficient image storage and retrieval via caching and lazy loading.

**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.

**Credit Card Fraud Detection with CLONALG** ☑

- Credit Card Fraud Transactions Classifier using a hybrid artificial immune system algorithm that mimics human secondary immune response (called CLONALG) that uses adaptive data vectors build from ground-up.

**MapReduce Simulation** ☑

- An application to leverage the popular Google Map Reduce algorithm for computation intensive tasks in a distributed async environment emulated using multiple docker processes with randomized delays.

## ORGANIZATIONS

**Web Development Lead, Journalism Club** ☑

Feb 2020 – Jan 2021

- Led 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%.