

# Samar Kansal

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## Experience

### Division of IT, Virginia Tech

Software Developer (GA)

Remote, US

Jan 2023 – Present

- Engineered a loaning system serving 40,000+ students using **MySQL**, **Rhino-compiled JavaScript backend** scripting, and **RESTful APIs** for handling 500+ daily transactions.
- Implemented calendar widget migration from Google Cloud to Azure using **Angular** and **GraphQL**, achieving 40% faster data retrieval. Redesigned email-to-ticket process for Outlook transition, utilizing **microservices** and **OAuth** authentication.

### ServiceNow

Hyderabad, India

Software Engineer-2

Feb 2022 – Dec 2022

- Contributed to a high-performance full-stack IT platform serving 5M+ users as primary landing page. Implemented **optimized database queries** on the backend and developed a responsive UI using **React** and **GoJS** to handle 2M+ daily task records.
- Developed a scalable SRE/DevOps application using GraphQL with MySQL for efficient data management, integrating a **Seismic (React-based)** frontend with **reusable components**, and implementing **real-time updates** for enhanced user experience.

Software Engineer-1

Aug 2020 – Feb 2022

- Built a multi-channel notification system with **MVC architecture**, **Java REST APIs**, and **WebSockets**, enabling automated SMS (100K+/day), email, voice alerts and conference bridges through **webhooks** integration with Zoom, Twilio, and Microsoft Teams
- Developed a Problem Management Migration Utility with a **React.js** interface to migrate records from legacy to enhanced schema. Implemented **complex data transformation** algorithms and **ETL processes**, achieving 99.9% accuracy for large-scale customers.

Software Developer Intern

July 2019 – Dec 2019

- Incident/Problem Management: Enhanced ITSM apps for 15,000+ organizations using internal JavaScript **scripting**, **jQuery**, **Vanilla JS**, and **GlideAjax**. Focused on feature improvements and error tracking with **GlideRecord** and **Client Scripts**.
- CI/CD: Developed and maintained automated test suites with 85% code coverage suites using **Java Selenium** within an **Agile** framework, integrating **Jenkins** for rapid regression detection in **SaaS-based** ITSM apps during sprints.

### AlphaICs

Bangalore, India

Software Developer Intern

May 2019 – June 2019

- Created custom ML operations (OPs) for **TensorFlow** with **C++** achieving 30% faster inference on edge devices.
- Implemented **parallel programming** techniques reducing computation by 3x for Molecular Dynamics using **OpenMP** and **CUDA**.
- Developed a real-time camera module interface in **C** processing 4K streams from 8 cameras with 40% reduced memory footprint.

## Projects

- Attendify: Scalable meeting scheduler and QR-based attendance system** [Recorded Demo Link](#)  
**Description:** Attendify is a cloud-native web application that enables event scheduling and QR-based attendance tracking, with a backend deployed in Kubernetes for scalability and efficiency. Utilized MongoDB for dynamic data management and Node.js/Express for robust API development.  
**Technology:** Node.js, Express.js, MongoDB, Vue.js, Pinia, Docker, Kubernetes, Redis, NGINX.
- CarCool: Your Vibe, Your Ride (Carpool Matching App)** [Recorded Demo Link](#) | <https://carcool.app>  
**Description:** CarCool is a carpooling platform that leverages ML-driven "Vibe Scores" for user matching and Kafka for real-time, event-driven notifications. Designed an efficient backend integrating MongoDB with geospatial queries (geohashing) and FastAPI for scalable RESTful services.  
**Technology:** FastAPI, Python, Kafka, MongoDB (Spatial DB with geohash), React, Docker.
- Ducky: Full-Stack AI Coding Assistant**  
**Description:** Built a production-grade coding assistant with 95% accuracy using fine-tuned LLMs and AutoGen framework, featuring real-time code generation, GitHub integration, and automated testing across 5+ programming languages.  
**Technology:** LangChain, AutoGen, Python, FastAPI, Redis, Docker, GitHub Actions, PostgreSQL, StreamLit.
- Video Streaming Application - MPTCP**  
**Description:** Developed a video streaming application serving 100+ clients with Multipath TCP (MPTCP), achieving 40% better bandwidth utilization through custom congestion control scheduler and maintaining 1080p at 30fps.  
**Technology:** Python, OpenCV, TCP/IP, MPTCP, Socket Programming.

## Education

### Virginia Tech

Masters in Computer Science (GPA: 4.00)

Dec 2024

Blacksburg, Virginia

### BITS Pilani

Bachelors in Electronics and Communication (GPA: 3.55)

July 2020

Hyderabad, India

## Technical Skills

**Programming Languages:** C/C++, Java, JavaScript, Kotlin, Python, SQL, TypeScript, PHP

**Technologies & Frameworks:** Node.js, Express.js, React.js, Angular, Vue.js, TensorFlow, jQuery, Bootstrap, PostgreSQL, MySQL,

Selenium, Autogen, FastAPI, Streamlit, Kafka, Kubernetes, MongoDB, Asyncio, SFML, nlohmann/json, SQLite, Box2D, OpenSSL, CMake

**Coursework:** AI Tools in Software Development, Software Engineering, Web App Dev, Mobile Dev, DSA, Operating Systems, Database Management, Object Oriented Programming, Network Programming, Social Media Analytics