Shri Sanjay Kumar Selvakumar

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EDUCATION

Arizona State University   **August 2024 – May 2025**
Master of Science in Computer Science   *Tempe, AZ*
- Accelerated 3+1 Master's Program

Barrett, The Honors College at Arizona State University   **August 2021 – May 2024**
Bachelor of Science in Computer Science   *Tempe, AZ*
- **Awards**: 6x Dean's List, New American University – Provost's Award   **GPA**: 3.94/4.00
- **Relevant Coursework**: Object-Oriented Programming | Data Structures and Algorithms | Distributed Software Development | Cloud Computing | Machine Learning | Artificial Intelligence | Data Processing at Scale | Project/Process/Quality Management

EXPERIENCE

Loki (Startup)   **January 2024 – June 2024**
Co-Founder/Lead Developer (Honors Thesis/Part-Time)   *Tempe, AZ*
- Engineered the backend infrastructure for the Loki mobile application with **PostgreSQL**, **Docker**, **TypeORM**, and **TypeScript**, **optimizing database queries** and **reducing latency** while meeting the needs of small businesses and consumers.
- Implemented **JWT authentication** for stateless session management and user authorization to maintain security and efficiency in client-server interactions with **React Native** and **Axios**.
- Directed performance testing initiatives under simulated high-traffic conditions using **Postman** and prepared platform for production by exploring deployment strategies with **Amazon S3**, **EC2**, and **ELB** for scalability and reliability.

Lotus Addiction Therapy (Startup)   **September 2023 – April 2024**
Software Developer (Capstone Project/Part-Time)   *Tempe, AZ*
- Led the integration of new subscription-based payment options and user roles, **growing user accessibility and engagement by 25%** using **React Native**, **TypeScript**, and **PostgreSQL**.
- Conducted cross-platform testing on **iOS** and **Android** simulators, performing **bug triage** and resolving **over 20 key functionality issues** to enhance app stability and **reduce crash rates by over 70%**.
- Deployed the mobile application to the **App Store** and **Google Play** using **Expo**, **AWS Amplify**, and **AWS Elastic Beanstalk**, ensuring reliability and compliance with privacy/security standards.

Cognizant   **June 2023 – August 2023**
Software Engineer Intern   *Boston, MA (Remote)*
- Enhanced an internal **Selenium WebDriver** automation testing tool using **ASP.NET** and **C#**, addressing bugs and proposing features that optimized test run search filtering and **reduced test analysis time by over 50%**.
- Eliminated performance bottlenecks by **reducing SQL query execution time by over 90%**, redesigning the interface to simplify workflow management and boosting operational efficiency across TriZetto CareAdvance teams.
- Integrated advanced search functionality into an internal tool using **Angular**, **TypeScript**, and **Azure DevOps REST APIs**, enabling faster retrieval of test runs from manual testing and CI/CD pipelines.
- Actively contributed in an **Agile** development environment, collaborating with cross-functional teams, participating in daily standups, and completing user stories and tasks via **Azure Kanban Boards** and **Git**.

PROJECTS

Retrieval-Augmented Generation (RAG) for arXiv Papers   **October 2024 – December 2024**
Python, PyTorch, NumPy, PIL, RocksDB, FAISS, Docker, Git
- Extracted text, images, tables, and formulas from arXiv academic papers and converted them into vectorized embeddings using **natural language processing (NLP)** and **vision transformer (ViT)** models.
- Optimized storage and retrieval by applying **indexing** and **chunking** strategies to allow users to query **large language model (LLM)** for contextual interpretations of paper content.

Graph Data Processing Pipeline   **October 2024 – December 2024**
Python, Neo4j, Docker, Kubernetes, Apache Kafka, Pandas (Project Report)
- Designed a **scalable and fault-tolerant system** for processing NYC Yellow Taxi trip records in real-time, converting them into a graph structure to identify insights like travel patterns and connectivity.

TECHNICAL SKILLS

Languages: Python, Java, TypeScript, C/C++/C#, SQL, Scala, Ruby, HTML/CSS, JavaScript, Shell Scripting
Frameworks & Libraries: Node.js, React.js, React Native, Expo, Angular, Ruby on Rails, .NET, Flask, FastAPI, FAISS
Databases & Tools: PostgreSQL, MySQL, Redis, RocksDB, Neo4j, Postman, Git, Selenium, JUnit, VSCode, Visual Studio, Eclipse
Cloud & DevOps: Amazon Web Services (AWS), Microsoft Azure, Docker, Kubernetes, Apache Hadoop/Spark/Kafka

CERTIFICATIONS

Amazon Web Services Certified Cloud Practitioner   **August 2024**
Amazon Web Services Certified Solutions Architect - Associate   **January 2025**