

# Syed Dawood Shah

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## Summary

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Experienced Software Engineer with over 2 years of professional experience, I specialize in **Back-end development**, **Cybersecurity**, and **Micro-services** architecture. My expertise extends to **System Design**, **Secure Service** development and maintaining **High-performance** cloud infrastructure. With a strong foundation in computer networks and operating system, I emphasize secure, scalable, and efficient solutions in every project. I am passionate about **Web Application security** and **Distributed systems** and I adhere to industry best practices such as **SOLID** principles, **DRY**, **KISS** to ensure robust, maintainable, and efficient solutions.

## Education

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**Namal University Mianwali**, BS in Computer Science

Sept 2019 – August 2023

- GPA: 3.72/4.0
- **Coursework:** Computer Networks, Software Engineering, Artificial Intelligence, Machine Learning, Internet of Things

## Experience

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**Software Engineer**, Technogenics – Pakistan, Lahore

August 2023 – Present

- Implemented RBAC for premium features, safeguarding key company assets by restricting access to authorized users only
- Optimized a Network Analyzer, reducing memory usage by over 96% and improving processing time by 66%.
- Redesigned the architecture of a Summary Generation Service; introducing asynchronous processing and notifications. Eliminated user-blocking scenarios, increasing user satisfaction by 45%
- Integrated a proactive feedback mechanism for a Virtual Assistant by creating webhooks to alert stakeholders of feedback issues. Reduced recurring complaints by more than 50% and increased product reliability.
- Enhanced database performance by optimizing indexes for range queries, reducing query execution times by 60%, and increasing overall system scalability.
- Improved multi-threaded application performance, resolving concurrency issues to decrease response times by 66%, ensuring faster task processing.
- Proactively improved service reliability, implemented liveness and readiness probes, reducing incidents by 70% and achieving near-zero downtime, enhancing user trust.
- Took the responsibility to work on the Front-End side, to reduce dependency issues and roll out new features in time, resulting in meeting SLAs by stakeholders.
- Integrated multiple vendors in our product. TVI included Virus Total, Silent Push, Cybersixgil, and many more.

**Internet Protocol Decoder**, Valyrian Systems Inc. – Santa Clara, CA

April 2022 – July 2023

- Conducted Network Traffic Analysis using Scapy to classify and identify application-specific packets.
- The TCP/IP stack was decoded and analyzed, including QUIC and TLS handshake packets, to improve the accuracy of packet detection.
- Data packets extracted for targeted applications like Twitter, improving data extraction accuracy by 25% and enabling better monitoring capabilities.

## Projects

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### Network Traffic Classification(FYP)

2022-2023

- Built a solution to classify network packets into application-specific categories (e.g. TikTok, WhatsApp). Blocked application based on classification and improved packet classification accuracy by 30% using advanced filtering techniques.
- Provided a solution that can be implemented on machines with low-computing power and can be used for traffic engineering, policy enforcement etc.

### Virtual Assistant

2023

- Developed the back-end for a virtual assistant using the RASA framework, responsible for performing operational, informational, analytical, enrichment tasks for the CyberSecurity domain.

### Notification Service

2024

- Design and implement a robust real-time notification system. It featured multiple components, including a dispatcher, scheduler, and retriever, ensuring reduced notification delays and reliable, guaranteed delivery.

### Quota Management System

2023-2024

- Developed a feature-rich system with real-time tracking to monitor usage effectively implementing usage enforcement mechanisms, automated notifications about quota usage, and refreshing quotas every 24 hours, ensuring seamless and consistent functionality.

## Technologies

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**Languages:** Python, JavaScript, SQL, C, TypeScript, Bash.

**Technologies:** Flask, FastAPI, Angular, Rasa, LLMs, Kubernetes, Docker, Kafka, RabbitMQ, Redis, ElasticSearch, MongoDB, PostgreSQL, WireShark, Git, BitBucket, GitLab, GCP, NginX.