AKSHAT GUPTA

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EDUCATION

M.S in Computer Engineering, **University of California, San Diego (UCSD)** Sept 2025 – Jun 2027
Relevant Coursework (Planned): Operating Systems, Modern Communication Networks, Computer Architecture, Distributed Systems, Cloud Infrastructure, Advanced Computer Networks
Availability: Summer 2026 internships (Jun–Sept 2026)

B.E in Electrical & Electronics Engineering, **BITS Pilani, India** Aug 2019 – May 2023
Relevant Coursework: Data Structures & Algorithms, Computer Programming, Object Oriented Programming, Digital Communications, Network Security
CGPA: 8.39/10.00

SKILLS

Programming	C/C++, Golang, Python, Bash, SQL, Shell Scripting
Networking	TCP/IP, UDP, HTTP/HTTPS, Routing & Switching, VLANs, Wi-Fi 802.11ax/be, DHCP, NAT, Packet Analysis (Wireshark/tcpdump)
Systems & OS	Linux Internals, Kernel Debugging, Device Drivers, Multi-threading, Rsyslog
Backend & APIs	REST APIs, gRPC, JSON-RPC, Microservices Architecture
Tools & Platforms	Docker, Kubernetes, Jenkins, Git, AWS (EC2, S3, IAM), BusyBox, Kafka
Other	CI/CD, Test Automation, Performance Profiling, Resource Optimization

EXPERIENCE

Software Engineer, Arista Networks Jul 2023 – Aug 2025
Pune, India

- Designed and implemented a **vendor-agnostic WLAN driver abstraction layer** in **C/C++**, enabling seamless integration across multiple Wi-Fi chipsets and reducing vendor-specific code by **60%**. Improved platform portability and reduced maintenance complexity.
- Developed a **secure, high-availability remote logging pipeline** using **TLS**, **SHA256 hashing**, and TPM-backed certificates; integrated automated certificate validation, `rsyslogd` daemon restarts, and fault-tolerant delivery mechanisms for distributed systems.
- Built and maintained a **Jenkins**-driven CI/CD ecosystem with automated build gating, real-time log parsing, and device health monitoring; improved code stability by **50%** and increased nightly regression pass rates by **35%**.
- Conducted performance tuning and memory optimization in embedded Linux systems, leveraging kernel-level debugging, multi-threaded I/O handling, and profiling tools to enhance throughput and reduce latency.

Intern – Associate Consultant, Indus Insights Analytical Services (UK Insurance Client) Jan 2023 – Jun 2023
Gurgaon, India

- Built and optimized high-volume **AWS Datalake pipelines** to process terabytes of structured/unstructured data; reduced query latency by **40%** through indexing strategies, partitioning, and schema optimization.
- Created backend data integration workflows using Python, SQL, and R to merge **20+ years** of historical records from heterogeneous systems; automated pipelines for data cleaning, transformation, and quality checks.
- Developed internal tooling for faster analytics delivery, integrating with Tableau dashboards and Excel-based executive reports for client-facing risk analysis.

PROJECTS

ML in Environmental Forecasting Aug 2024 – Present
Co-authored a review of **30+ ML models** (regression, ensemble, deep learning) applied to large-scale spatiotemporal datasets. Compared models using **R^2, RMSE, MAE, F1 Score** and analyzed interpretability vs. performance trade-offs. Techniques included feature engineering for time-series, bias-variance analysis, and ensemble blending.

UAV Base Station Positioning Algorithms Apr 2023 – Aug 2023
Evaluated and implemented 21 algorithms in C++/Python for wireless coverage optimization; designed simulation environments with dynamic constraints, applying performance profiling and resource optimization principles.

IoT Applications of UAVs Jan 2023 – Apr 2023
Simulated and analyzed **10+ IoT-UAV deployment strategies** for agricultural monitoring, logistics, and smart city applications. Measured latency, throughput, and energy trade-offs.

CERTIFICATIONS AND AWARDS

CleanIT Hackathon Winner, Arista Networks Apr 2024
Developed a Python-based automated cleanup and anomaly detection pipeline to address long-running tests and reboot loops; reduced testbed infrastructure load by **45%** and freed **30%** more testbed capacity.

Cisco Certified Network Associate (CCNA) – In Progress Exam Date: Aug 2025