AKSHAT GUPTA

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EDUCATION

M.S in Computer Engineering, **University of California, San Diego (UCSD)** Sept 2025 – Jul 2027
Relevant Coursework (Planned): Operating Systems, Modern Communication Networks, Internet Algorithmics, Computer Architecture, Machine Learning Algorithms, Cloud Infrastructure

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

SKILLS

Programming Languages	C/C++, Golang, Python, Bash, SQL
Networking	TCP/IP, Routing & Switching, Wi-Fi (802.11ax/be), DHCP, NAT, Packet Analysis
Operating Systems	Linux Internals, Kernel Debugging, Systemd, Device Drivers, Rsyslog
API Development	REST APIs, JSON-RPC, gRPC
Tools & Platforms	Docker, Jenkins, Git, AWS, BusyBox, Tableau
Analytical Tools	R Modelling, Pandas, NumPy, Tableau, MS Office Suite

EXPERIENCE

Software Engineer, Arista Networks Jul 2023 – Aug 2024
Pune, India

- **Driver2.0 – Vendor-Agnostic WiFi Driver Layer:** Led the development of a hardware-agnostic driver abstraction layer for WiFi Access Points, reducing chip-specific code by **60%** and enabling faster hardware migrations.
- **Common Criteria – Secure Remote Syslog over TLS:** Delivered a production-grade TLS-enabled remote syslog pipeline for federal and enterprise clients; integrated SHA256 integrity checks, TPM-based cert access, and automated rsyslogd restarts.
- **Test Infrastructure, Autotests & CI:** Designed and maintained a Jenkins Build Sanity Pipeline with build gating and log fingerprinting; reduced bad merges by >**50%**; implemented device recovery and led nightly test stability efforts, boosting test pass rate by **35%**.

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

- Developed optimized database pipelines on AWS Datalake, improving query latency by **40%**; merged 20+ years of legacy datasets using custom data reconciliation logic.
- Leveraged Python (Pandas, NumPy), SQL, Tableau, Excel, and R for automated analytics, dashboards, and executive summaries.

PROJECTS

ML in Environmental Forecasting Aug 2024 – Present

- Co-authored a review of **30+ ML models** (regression, ensemble, deep learning) for air, water, and climate forecasting.
- Compared metrics like R^2, **RMSE, MAE, F1 Score**, and designed interpretability-focused flowcharts.
- Paper under review in a leading environmental data science journal.

UAV Base Station Positioning Algorithm Analysis Apr 2023 – Aug 2023

- Contributed to a study evaluating **21 UAV positioning algorithms**; analyzed 7+ real deployments to select best-fit hybrid models.
- Achieved **23% better signal coverage** and **17% energy savings** through real-world reconciliation.

IoT Applications of UAV Base Stations Jan 2023 – Apr 2023

- Analyzed **top 10 IoT-UAV use cases** across smart cities, agriculture, and logistics in a conference paper.
- Mapped performance improvements: **30% faster data relay**, **40% wider sensor coverage** across networks.

CERTIFICATIONS & AWARDS

CleanIT Hackathon Winner, Arista Networks Apr 2024
Developed an automated cleanup pipeline to report long-running tests and reboot-loops across APs, reducing autotest infrastructure load by **45%** and freeing up **30%** more testbed resources.
Cisco Certified Network Associate (CCNA) – In Progress Exam Date: Aug 2025