Divyanshu Talwar

Email: divyanshu15028@iiitd.ac.in | Website: divyanshu-talwar.github.io

Work Experience

Goldman Sachs May 2019 - Present
Vice President | Senior Software Engineer

Resilience Engineering

- Designed and implemented a **distributed system** to construct a **dependency graph**, identifying **engineering assets** supporting critical business functions by processing over **2 trillion network telemetry records daily**, enhancing **firm-wide observability**.
- Developed systemic processes to **simulate engineering outage scenarios** and proactively **flag recoverability risks**, resulting in the timely remediation of **27% potential incidents** across **350+ systems firm-wide**.
- Devised solutions to assist **20+ business units** with **incident blast-radius assessments**, **operational readiness evaluations**, and **architectural uplifts**.
- Spearheaded the implementation of solutions enabling the firm's **Critical or Important Functions (CIFs)** to track their **Digital Operational Resilience Act (DORA) compliance** in **real-time**.
- Identified and implemented key **optimizations** that improved **system response time** by **42%**, **operational efficiency** by **38x**, and reduced **development overheads** by **35%**.

Technology Risk

- Lead architect and developer of the **streaming integration** between **detection platforms** and the firm's **Security Incident and Event Management (SIEM)** system, ensuring **incident creation within 50 ms** of event detection and achieving a **99.999% availability**.
- Engineered a **CI/CD platform** enabling Security Operations Center (SOC) analysts to **deploy detection queries** over live-streaming events, processing ~**100K events per second** for **real-time** incident **detection** and **triage**.
- Designed a **synthetic testing framework** to provide real-time insights into **detection-query-level latency**, **availability**, and **correctness**, improving **system reliability** by **18%** and reducing **false positives** by **25%**.
- **Automated** regulatory and legal **reporting** through **self-service portals**, reducing **manual work** by **10+ hours per week** while ensuring **100% compliance** with audit requirements.
- Led **incident postmortems**, fostering a **blameless culture** while identifying and addressing gaps.
- Played a key role in **recruitment** by curating interview questions for **firm-wide hiring initiatives**.

Education

IIIT Delhi New Delhi, India
Bachelor of Technology in *Computer Science and Engineering* **CGPA**: 9.84/10 | Institute **Rank 2** May 2019

Skills

Languages & Libraries:	Python, C/C++, Java, Bash, Go, C#, MATLAB, PyTorch, CUDA, OpenGL.
DevOps & Tools:	Docker, Kubernetes, Terraform, AWS, BigQuery, SQL, MongoDB, ElasticSearch, Kafka, ksqlDB, Linux, Git, Unity.

Publications

Cited over **185** times. For full list: Google Scholar page.

- **Divyanshu Talwar**, Aanchal Mongia, Emilie Chouzenoux, Angshul Majumdar; Binary Matrix Completion on Graphs: Application to Collaborative Filtering. **Digital Signal Processing** Vol. 122, 103350 (2022).
- **Divyanshu Talwar**, Aanchal Mongia, Debarka Sengupta, Angshul Majumdar; AutoImpute: Autoencoder based imputation of single-cell RNA-seq data. **Scientific Reports, Nature** Vol. 8, 16329 (2018).

Academic Interests

Machine Learning	GPU Computing	Computer Graphics	Algorithm Design	Virtual Reality
Theory of Computation	Linear Algebra	Probability & Statistics	Operating Systems	Portfolio Management

Selected Projects

ShakaLakaBoomBoom	3D scene generation with inflated 2D sketches, maneuvered using hand-gestures.
Parallel DFS	CUDA C++ implementation of the parallel DFS algorithm offering a 1.75x speedup.
Disentangling faces	Non-adversarial generative models for faces using disentangled latent representations.
Mapbots	Mapping rooms using an ultrasonic sensor ring mounted on an autonomous bot.

Awards and Recognition

Dean's List for academic excellence awarded in all years at IIIT Delhi.
First runner up at Code-Off: All-India Hackathon with over 350 participating teams.
Country topper at the Third Amity International Olympiad for Physics.