Divyanshu Talwar

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Work Experience

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

Resilience Engineering

- Designed and implemented a distributed computing system to **auto-discover operational dependencies** by processing over **2 trillion** network telemetry records daily, condensing them into a comprehensive **knowledge graph** to enhance **firm-wide observability**.
- Developed systemic processes leveraging the knowledge graph to **proactively flag operational risks**, enabling timely remediation of vulnerabilities.
- Implemented knowledge-graph-powered solutions to assist teams in **scaling**, **disaster readiness**, and **blast-radius analysis**, significantly improving system reliability and incident response.
- Engineered API solutions enabling critical functions (CIFs) to track their real-time **Digital Operational Resilience Act (DORA)** compliance, ensuring systematic regulatory adherence.
- Identified and implemented key **optimizations** that improved system response times, operational efficiency, and reduced development overhead.

Technology Risk

- Engineered a stream-processing solution for **CI/CD deployment** of **security event detection rules**, processing ∼**100K events per second** for **real-time detection** and **triage**.
- Led the architecture and development of the **streaming integration** between **detection platforms** and the firm's **Security Incident and Event Management (SIEM)** system, ensuring **case creation within 50 ms** of event detection with **99.999% availability**.
- Designed a **synthetic-event-based observability dashboard**, providing granular insights into **real-time latency**, **availability**, and **correctness** at the event detection rule level.
- **Automated** regulatory and legal **reporting** processes, by creating self-service portals that reduced manual work and improved efficiency, while ensuring appropriate access controls.
- Led **incident postmortems**, fostering a **blameless** culture while identifying and addressing gaps, and 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

Disentangling faces	Non-adversarial generative solutions using disentangled latent representations of faces.
ShakaLakaBoomBoom	3D scene generation with inflated 2D sketches, maneuvered using hand-gestures.
Parallel DFS	CUDA C++ implementation of the parallel DFS algorithm offering a 1.75× speedup.
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.