

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 **discover operational dependencies** by processing over 2 **trillion** network telemetry records daily, condensing them into a dynamic **knowledge graph** to enhance **firm-wide observability**.
- Developed systemic processes leveraging the knowledge graph to **proactively flag operational risks**, leading to timely remediation and a **30% reduction** in **risk exposure** across **350+ systems** firm-wide.
- Implemented knowledge-graph-powered solutions to assist **20+ business units** in **scaling**, **disaster readiness**, and **blast-radius analysis**, significantly improving system reliability and incident response.
- Engineered API solutions enabling all **critical functions (CIFs)** to track their real-time **Digital Operational Resilience Act (DORA)** compliance.
- Identified and implemented key **optimizations**, improving **system response times** by **42%**, **operational efficiency** by **38×**, and reducing **development overheads** by **35%**.

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 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, while achieving a **99.999% availability**.
- Designed a **synthetic-event-based observability dashboard**, providing real-time insights into **latency**, **availability**, and **rule correctness**, improving **system reliability** by **15%** and reducing **false positives** by **28%**.
- Automated** regulatory and legal **reporting** processes 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

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| 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. |
| 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.