

Khushit Shah

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EDUCATION

Indian Institute of Science

June 2025

M. Tech., Computer Science and Automation

GPA: 9/10

- **Relevant Courses:** High-Performance Computer Architecture (10/10), Compiler Design (10/10), Graphics and Visualization (10/10), Computer Security (10/10), Program Analysis and Verification (10/10), Design and Analysis of Algorithms (9/10), Operating Systems (8/10)

Dharmsinh Desai University

April 2023

B. Tech., Information Technology

GPA: 9.2/10

EXPERIENCE

Nutanix | MTS - 2

June 2025 – Present

- Root-caused and fixed a **complex KVM** split irqchip **issue** affecting guest EOI handling; contributed the fix **upstream** to the **Linux** kernel^[1].
- **Designed** and **implemented** the ARM named CPU model framework for Nutanix virtualization platforms and actively led its upstreaming efforts to QEMU^[2].
- Drove virtualization enablement for next-generation Intel and AMD server platforms (Granite Rapids and Turin), including CPU feature support, validation, and performance evaluation.

Salesforce | Intern

May 2024 – July 2024

- Developed models to identify and quantify forward-buy effects in historical sales data.
- Generated **100K weeks** of synthetic sales data to overcome feature gaps in real sales data.
- Achieved **75%** precision and recall, with a mean absolute error (**MAE**) of **0.91** on synthetic test data.

PROJECTS/PUBLICATIONS

Optimizing GPU memory over-subscription | C/C++, Linux Driver, eBPF, NVIDIA GPUs, Git Nov 2024 - June 2025

- Improved visibility into NVIDIA GPU memory access patterns using advanced monitoring techniques.
- Modified NVIDIA GPU driver to enable dynamic and customizable eviction policy selection.
- Optimized eviction count and execution time for certain applications, achieving over **50%** improvement.
- **Publication: ISCA 2026 (2nd author), [Paper link](#).**

mlir-pandas | C/C++, MLIR, Compilers, Git

Feb 2024 – Apr 2024

- Developed a custom MLIR dialect to implement 10 core Pandas operations.
- Lowered to parallelized LLVM IR, incorporating operator fusion and data flow optimizations for efficiency.
- Achieved a **3%** performance gain on a subset of TPC-H queries over Pandas' Python implementation.

PointsTo Analysis for Static Java Programs | Java, Soot, Git, Static Analysis

Oct 2023 – Dec 2023

- Implemented PointsTo analysis at every program point in multi-procedural static Java programs using the bounded call-strings approach for inter-procedural analysis.
- Handled complex cases involving reachable and unreachable infinite recursions.

Optimizing Dilated Convolution | C/C++, CUDA, pthreads, SIMD, Optimization

Oct 2023 – Nov 2023

- Achieved **10x** speedup in single-threaded performance using SIMD, loop-unrolling, and optimized memory access.
- Implemented multi-threading with pthreads, further improving performance by **60x**.
- Designed and optimized a CUDA implementation, achieving a **1300x** speedup.

AWARDS & ACHIEVEMENTS

- **AIR 11 out of 75,000+ candidates in GATE CS 2023.**
- **Top 3 in M.Tech (CSA), IISc (Class Strength: 75+).**
- **Gold Medalist in B.Tech (Top 1 out of 150 students).**