Nandan Parikh

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Education

Birla Institute of Technology & Science, Pilani, BE in Computer Science — Aug 2019 – July 2023

- Overall GPA: **8.8**/10, Major GPA: **9.48**/10
- **Thesis:** High Throughput Microscopy Image Deblurring
- **Coursework:** Deep Learning, Image Processing, Operating Systems, Applied Statistical Methods, Computer Networks, Compiler Construction

Publications

- R. L. Schalek, **N. Parikh**, Y. Wu, J. W. Lichtman, and D. Wei, *Real-time Image Deblurring to Improve Throughput of Serial-Section Volume Electron Microscopy for Neural Connectomic Studies*, *Microscopy and Microanalysis*, vol. 29, no. Supplement_1, pp. 988–989, Aug. 2023. `https://doi.org/10.1093/micmic/ozad067.494`.

Experience

Software Development Engineer II (SDE-2), Flipkart – Bengaluru, India — March 2025 – Present

- Conceptualized and led the **end-to-end design** of an LLM-powered **Open Search system**, managing HLD, LLD, and fault-tolerant pipeline creation to prepare for market deployment
- **Benchmarked** vector databases and **implemented guardrails**, addressing risks such as explainability gaps and hallucinations in LLM-based systems

Software Development Engineer I (SDE-1), Flipkart – Bengaluru, India — July 2023 – Feb 2025

- **Revamped** the Hotel's Division search system, improving user experience and **reducing the p95 latency by almost 50%** (from 1.9s to 900ms) through **efficient caching** and **query optimisation**
- Owned and delivered a **ranking federator** to enhance search result relevance using contextual user inputs

Undergraduate Research Assistant, Boston College CV Lab – Boston, MA — Jan 2023 – July 2023

- Created an end-to-end **microscopy image deblurring** pipeline including blur detection and correction to increase microscope throughput
- Implemented a novel **graph reasoning attention network** for better semantic representation of the regions
- Researched and implemented various **no-reference** blur detection metrics to select the best fit for the use case

Software Engineering Intern, Flipkart – Bengaluru, India — Jun 2022 - Aug 2022

- Created a **Python** wrapper for security framework **MobSF** and integrated it with company's in-house software
- Used **Google Apps Script, HTML and CSS** to create a self-service portal for people to scan their Google Drives
- Created a **CLI tool** using **Python and Google APIs** for admins to scan if organization files are being shared externally
- Took charge of the development life cycle and helped **increase team productivity** by reducing time spent on manually checking drives

Projects

SONAR to Satellite Image translation
Supervisor: Prof. Amitesh Singh Rajput

- Designed and developed an architecture for translating **SONAR images to satellite images**.
- Trained a **Pix2Pix-based model** for image translation, incorporating a domain-specific **image enhancement module** for improved performance.
- Implemented a **multi-scale discriminator** and an **edge-guided loss function** to enhance translation quality and preserve edge details.

- Enhanced **FID** from **71.584** to **70.815** and **PSNR** from **31.76** to **32.85**.

Compiler for Custom Language GitHub
Course Project for CSF363

- Created a **custom compiler** using **C** with given language specifications
- Implemented various features like the **parser**, **abstract syntax tree**, **semantic analyzer** and **type checker**
- Worked in a group of five people and our group stood **6th** out of 80 groups

Underwater Image Enhancement
Supervisor: Prof. Pratik Narang

- Undertook the task of enhancing underwater images using **hyperspectral images**
- Developed an **Unsupervised domain adaption GAN** architecture to translate RGB images to Hyperspectral images using a **PyTorch** backbone
- Introduced a **Spectral profile optimisation loss** to improve translation between the images
- Achieved a **PSNR of 17** close to state of the art models

Checkmate 2020 GitHub
Game Development

- Collaborated with a team of three to develop a 3D first-person game using **Unity (2019.2)**, with scripting in **C#**.
- Designed and implemented the logic for **Enemy NPCs** from scratch using a state machine and integrated game score tracking with a **Node.js server**.
- Developed **multiple minigames** within the game environment, utilizing various features and tools provided by **Unity3D**.
- Enhanced the game environment using **Unity ProBuilder**, and deployed the game online through **Unity WebGL**.

Technical Skills

Languages: C, Java, Python, SQL, Springboot, MATLAB

Technologies: ElasticSearch, Aerospike, Redis, Qdrant, MongoDB

Libraries: PyTorch, Tensorflow, Numpy, Pandas, OpenCV, Scikit-learn

Teaching Experience

Teaching Assistant - Neural Networks and Fuzzy Logic

- Shortlisted research papers that all students could pursue
- Helped students prepare their term papers and projects

Leadership and Extracurricular Activities

Association of Computing Machinery (ACM), BITS Pilani
Core Member Junior Year

- Developed and launched a program connecting students with **experts in niche technical fields**, bridging gaps in university research and fostering innovation.
- Organized alumni-led talks on diverse career paths, providing students with real-world insights and mentorship.
- Contributed to high-level decision-making to shape the chapter's strategic initiatives and events.

Game Development Lead Sophomore Year

- Led and contributed to the creation of a game showcased at the university's technical fest, **APOGEE**, enhancing its visibility and engagement.
- Recruited and mentored students in game development, fostering technical skills and building a sustainable community.