Nandan **Parikh**

CS Undergrad

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Education

BITS Pilani

Pilani, Rajasthan

Bachelor of Engineering (Hons.) in Computer Science

May 2023 (Expected)

- **Relevant Coursework:** Computer Programming, OOP , Data Structures and Algorithms, Database Management, Image Processing, Deep Learning, Operating Systems, Applied Statistical Methods
- **Extra Curricular:** Core team member at BITS-ACM | Game Developer at Coding Club

Work Experience

Boston College | CV Lab

Boston, USA

Undergraduate Research Assistant | Advisor: Prof. Donglai Wei

October 2022 - Present

- Worked on **3D nucleus segmentation** using PyTorch Connectomics
- Used **watershed segmentation** and introduced a **contour-based loss** which **improved the performance** of the baseline model
- Currently working on building a **microscopy image deblurring** pipeline using a **GAN based method**

Flipkart

(Bangalore, India

SDE Intern

June 2022 - July 2022

- Created a Python wrapper for security framework **MobSF** and integrated it with Flipkart's in-house software
- Developed a **self-service portal** for the employees of Flipkart to get their Drives scanned using **Apps Script**
- Created a **CLI tool** using **Python and Google APIs** for admins to scan if organization files are being shared externally

Tata Consultancy Services (TCS) - Research

(Remote)Pune, India

Research Intern | Advisor:- Dr Niranjan Pedanekar

November 2021 - March 2022

- Working on the project **Ambient audio advertising for games**
- Implementing and comparing different architectures for **audio style transfer**

Multimodal Cognition research group

Pilani, India

undergraduate Research Assistant | Advisor:- Dr Pratik Narang

January 2021 - December 2021

- 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

Projects

SONAR to Satellite Image translation

Mentor:- Dr Amitesh Singh Rajput

- Developing an architecture for translation of **SONAR images to Satellite Images**
- Trained a **Pix2Pix** based architecture for translation and implemented a domain specific **Image enhacement module**
- Implemented a **Multi-scale discriminator** and an **edge guided loss** for improving translation
- Improved the **FID score** to **70.815** from **71.584** and **PSNR** from **31.76** to **32.85**

Compiler for Custom language

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**
- The final compiler was capable of **lexical analysis, syntax tree creation, semantic analysis, static and dynamic type checking**
- Worked in a group of five people and our group stood **6th** out of 80 groups

Skills

Languages	**Advanced:** Python | **Intermediate:** C/C++, MATLAB, C#, Java
Deep Learning	**Advanced:** PyTorch, Tensorflow | **Intermediate:** FastAI, Darts
Libraries	**Advanced:** Scikit-learn, OpenCV | **Intermediate:** NumPy, Pandas | **Beginner:** Matplotlib
Game Development	**Advanced:** Unity3D | **Beginner:** Blender
Web Development	**Advanced:** Apps Script | **Beginner:** HTML CSS