Nihal Jain

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EDUCATION

Carnegie Mellon University – School of Computer Science *Pittsburgh, PA*
Master of Science in Machine Learning | GPA: 4.0/4.0 *Dec 2022*

Birla Institute of Technology & Science (BITS), Pilani *Hyderabad, India*
Bachelor of Engineering in Computer Science | GPA: 9.94/10.0 *Jul 2021*

WORK EXPERIENCE

Adobe Research *Bangalore, India (Remote)*
Research Intern *Jan 2021 – Jul 2021*

- Designed a data-driven algorithm to perform multi-view similarity search given a collection of images
- Implemented a self-supervised deep learning pipeline trained on **~300K** images using PyTorch to obtain disentangled multi-view representations of images
- Formalized composition of multiple collections of images to enable a novel querying technique for similarity search
- Submitted a research paper documenting the method and results at a premier web search conference (under review)

Research Intern *May 2020 – Jul 2020*

- Developed GANs to generate color profiles conditioned on textual queries collected from Google's Bigrams Corpus
- Improved image search performance by utilizing generated color profiles conditioned on textual queries
- Conceptualized an end-to-end deep learning pipeline for image editing using textual input only

Indian Institute of Remote Sensing – Indian Space Research Organisation (ISRO) *Dehradun, India*
Research Intern *May 2019 – Jul 2019*

- Automated land cover classification of satellite imagery of Indian terrain sourced from ESA's Sentinel-1 satellite
- Implemented six CNN models for semantic segmentation of temporal satellite imagery using Keras
- Evaluated generalization using the Jaccard score for large unseen images of North India spanning **2500 sq. km**.

SELECTED PUBLICATIONS

- *Nihal Jain*, Praneetha Vaddamanu, Paridhi Maheshwari, Vishwa Vinay, Kuldeep Kulkarni. 2021. Inspiration Retrieval for Visual Exploration. In Machine Learning for Creativity and Design (NeurIPS 2021 Workshop). 2021. [Link]
- Paridhi Maheshwari, *Nihal Jain*, Praneetha Vaddamanu, Dhananjay Raut, Shraiysh Vaishay, and Vishwa Vinay. 2021. Generating Compositional Color Representations from Text. In Proceedings of the 30th ACM International Conference on Information and Knowledge Management (CIKM '21). 2021. [Link]

PATENTS

- "Color Representations for Textual Phrases", U.S. Patent Application No. 17/111,819, filed 4 Dec 2020
- "Textual Editing of Digital Images", U.S. Patent Application No. 17/079,844, filed 26 Oct 2020

PROJECTS

Image Restoration *BITS | Sep 2020 – Nov 2020*

- Designed an image processing CNN pipeline for noise segmentation followed by inpainting to restore damaged images using OpenCV and PyTorch libraries in Python
- Achieved **~10%** improvement over heuristic-based approaches for image restoration

Drive Chat *BITS | Sep 2020 – Nov 2020*

- Developed a chat web-application using Vue.js hosted on Firebase to support real-time instant messaging
- Integrated Google Drive API into the application to facilitate resumable file sharing of sizes up to **5 TB**

SKILLS

Programming Languages: Python, C/C++, JavaScript, Java, Shell
Development Tools & Frameworks: PyTorch, Spark, Tensorflow, Flask, Vue.js, React.js, Git

AWARDS & HONORS

Institute Gold Medal – BITS, Pilani *Aug 2021*

- Awarded a Gold Medal for having obtained first position among the class of ~1100 graduating students

KC Mahindra Scholarship for Post Graduate Studies Abroad – KC Mahindra Education Trust *Jul 2021*

- Awarded scholarship to pursue post-graduate studies abroad offered to ~50 out of > 1000 applicants

Merit Scholarship – BITS, Pilani *Aug 2017 – Jul 2021*

- Received full tuition-waivers every semester offered to the top 1% of students for academic performance