

HARSH PAL

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EDUCATION

Examination	Institute	Year	GPA
Graduation	IIT Bombay	2022 (Grad. 2023)	8.43(10)
Intermediate/+2	CBSE	2018	93.8%

B.Tech + M.Tech: Electrical Engineering, **Minor Degree:** AI and Data Science

PROFESSIONAL EXPERIENCES

Amazon, Team Alexa International - Applied Scientist Intern [May'22 - Oct'22]

Received **Letter of Recommendation** from the Mentor for Exemplary performance during the Internship

- Built a machine learning model to identify Amazon **Alexa users who are going to Churn** in next month
- Performed **Feature Engineering** of **5 million+** data points, extracted using Redshift, on AWS Sagemaker
- Boosted **F1-Score** by **13%** of the **XGBoost** model on test set by **Feature Selection** using **ANOVA F-test**

Siemens Technology and Services Pvt. Ltd.

Research and Development in **Semantics**, Summer Internship [May'21 - Jul'21]

- Developed a model to automate the process of tagging research papers and patents documents into topics
- Built a new method of document tagging based on **TF-IDF**, **Topic modeling** and **Word similarity matching**

Research and Development in **Semantics**, Winter Internship [Dec'21 - Feb'22]

- Built query-based **Question-Answering system** over company **Knowledge graph** presented in RDF format
- Performed **Named Entity Recognition** and **Semantic Role labeling** for keyword extraction on input query

Angle AI Pvt. Ltd. - Machine Learning Developer [Mar'20 - Jun'20]

- Developed image **Liveness detection** model for preventing spoofing in Automatic KYC verification system
- Implemented transfer learning on pre-trained **EfficientNet** model in Pytorch and achieved **0.85 F-1 Score**

MAJOR PROJECTS

3D Shape Retrieval with Domain Adaptation - M.Tech Thesis | **Adobe Research, India** [Jul'22 - Present]

- Working on a Novel problem statement of **Domain adaptation** in single **Image based 3D shape retrieval**
- Implementing Domain Adaptation in 2D and 3D domains by optimizing **Smoothness** and **Adversarial loss**
- Leveraging **Language models** to map feature vectors from 2D and 3D domains by **Semantic Alignment**

Domain Adaptation in Medical Images - R&D Project | **Prof. Amit Sethi** [Jan'22 - Jun'22]

- Implemented techniques to **Preserve ML model performance** from **Domain Shift** problems in deployment
- Improved accuracy from **60.66%** to **81.40%** by Domain Adaptation using **KimiaNet** as the feature extractor

MNIST Classification by Min-Max Optimization - Course Project [Mar'22 - Apr'22]

- Trained the CNN model using **Gradient Ascent-Descent algorithm** to optimize the custom **Min-max loss**
- Achieved **8.57%** improvement in Worst-case accuracy of a single class using the min-max optimization

Image Denoising using CNN - Course Project [Sep'21 - Oct'21]

- Implemented **Encoder-decoder based** model from scratch for **End-to-End Denoising** of noised images
- Achieved best **MSE score of 0.0026** and **PSNR of 26.19** on a testing set of open-source BSDS300 dataset

ACHIEVEMENTS

Scholastic	<ul style="list-style-type: none">• Recipient of KVPY fellowship award from Govt. of India [2017]• Recipient of Internship offer from Prestigious NITI Aayog, Govt. of India [Dec'21]
Competitions	<ul style="list-style-type: none">• 1st Position in Image Classification Kaggle Competition among 100+ Students [2021]• 1st Position in Sci-Comp Blitz (Inter-hostel Coding competition) [2021]• 2nd Position in Inter-Hostel Dance General Championship (GC) [2020]• 2nd Position in Kuber Ka Khajana Inter-hostel tech GC (Led the Hostel team) [2021]
Awards	<ul style="list-style-type: none">• Technical Person of the Year award from Hostel Tech council [2021]• Technical Special Mention award from Hostel Tech council [2020]• Top 3 Best ITSP project award among all the projects in ITSP [2019]