ABHINAV BOHRA

Final year student, Department of Computer Science & Engineering, IIT Kharagpur, India

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EDUCATION

B.Tech & M.Tech in Computer Science & Engineering

"Micro Specialization in Artificial Intelligence"

Indian Institute Of Technology, Kharagpur

Jul'18 – Jun'23 (Expected) Kharagpur, India GPA: 9.51/10

Class XII - Central Board of Secondary Education

Apr'16 – Mar'17 Ahmedabad, India Score: 93%

Class X - Central Board of Secondary Education

Apr'14 – Mar'15 Ahmedabad, India GPA: 10/10

INTERNSHIPS

AMAZON | Applied Scientist Intern

Advertising Technology, Bangalore Jan '22 – July '22

- Generated annual savings over **$7.13M** by enhancing fraudulent IP detection algorithm with **4.75 bps** reduction in false positive rate
- Developed DNN-based crawler bot detection model with **11.9%** improved robotic coverage & **4.9%** higher impression invalidation rate

IBM RESEARCH AI | Research Intern

Business Process Automation, Bangalore Dec '21 – May '22

- Carried out statistical analysis of data quality issues as a collection of patterns to improve performance of **predictive process models**

ADOBE INC. | Research Intern

Big Data Experience Lab, Bangalore May '21 – Aug '21

- Developed a machine learning-based framework for automated **multimodal document generation** from a collection of procedural videos
- Published in 27th Annual Conference on Intelligent User Interfaces- **ACM IUI '22** & filed an application for **US Patent** (Ref No.: P11139-US)

PHILIPS | ML Engineer Intern

Philips Innovation Campus, Bangalore Apr '20 – Jun '20

- Designed, developed & deployed Machine Learning based software to **predict software vulnerabilities** for optimizing software testing process
- Developed toolkit's user interface using HTML5, CSS & JavaScript, and integrated it with ML backend using Eel to render real-time predictions

IIM AHMEDABAD | ML Intern

Dept. of Production & Quantitative Methods May '19 – Jul '19

- Implemented an unsupervised, graph-based topic modeling algorithm to extract **1000+** topic-specific articles from CNN dataset using NLP

POSITION OF RESPONSIBILITY

Business Club | Head Analytics

- **Speaker** at knowledge sessions on machine learning algorithms such as Logistic & Linear Regression, Naive Bayes, Decision Trees, Clustering etc
- Organized 1st International edition of Indian Case Challenge, Asia's largest Case Study Competition, with **1.7K** participants from **100+** cities

AWARDS & ACHIEVEMENTS

- Secured a Department Change to 'Computer Science and Engineering' by being in **Top 1%** amongst 1465 students in first year
- Achieved **second** place in Facebook Hack Coding Cup 2021 and Global Rank **12** in CodeChef Challenge, Rank **148/20,785** in Long Challenge

TECHNICAL SKILLS

- **Areas of Interest:** Deep Learning, Natural Language Processing, Computer Vision, Data Structures & Algorithms, Software Engineering
- **Languages:** C, C++, Python, Bash, JavaScript, SQL, Java
- **Libraries:** PyTorch, TensorFlow, Keras, PySpark, Sci-kit Learn, Scipy, Matplotlib, OpenCV, Numpy, Pandas, Django, Flask

MAJOR PROJECTS

Financial Long Text Summarization

In Association with Goldman Sachs Autumn 2022

- Created ECTSum, the **first** long financial document summarization dataset with unstructured ECTs & concise summaries with key KPIs
- Benchmarked the dataset using state-of-the-art summarization models such as BigBird, SummaRuNNer and Longformer Encoder Decoder
- Proposed FinBERT-T5 paraphraser model with **13.3%** ROUGE-2 gain & **8.5%** less factual hallucination. Published Long Paper at **EMNLP '22**

Neural File Search Engine

Prof. Palash Dey, IIT Kharagpur Autumn 2022

- Designed & developed NLP-based intelligent local file search engine using SBERT-based dual encoders & KeyBERT topic extraction model
- Implemented cache optimization to reduce the response time by **70%**

Multilingual News Article Similarity

Prof. Pawan Goyal, IIT Kharagpur Spring 2022

- Devised mBERT-based Sentence Transformer model coupled with cosine similarity for multilingual news article similarity prediction
- Achieved **Rank 19** in the official SemEval Task 8, 2022 Global Leaderboard with a Pearson co-relation score of **0.721**

Generative Techniques for ACOS Quad Extraction

Complex Networks Research Group, IIT Kharagpur Autumn 2021

- Proposed novel generative techniques for ACOS task using BART-based Unified Generative Framework and Set Prediction Network
- Developed a Pointer Network-based auto-regressive decoding solution with **11%** F1 gain on both Restaurant & Laptop ACOS dataset

Multi-tasking Framework for Emotional Analysis

Complex Networks Research Group, IIT Kharagpur Spring 2021

- Implemented a **multi-tasking ensemble** framework to jointly learn emotional classification and intensity prediction (regression) problems
- Leveraged the latent representations obtained from training three deep NNs (CNN, LSTM, GRU) and built an MLP network on top of it
- Achieved **5.2%** increase in accuracy & **0.33** lift in Pearson co-relation score for emotion classification and intensity prediction tasks

OTHER PROJECTS

- **Video Game Level Generator:** Applied Deep Convolutional GANs to the automatic creation of playable Super Mario video game levels
- **Privacy-Preserving-ML:** Implemented SVM using partial homomorphic encryption to ensure secure ML operations on sensitive data
- **Decision Tree Classifier** using ID3 algorithm without off the shelf usi. Performed reduced error post pruning evincing 1.5% acc. gain
- **Naive Bayes Classifier:** Programmed Gaussian and Multinomial Naive Bayes with Principal Component Analysis from scratch
- **HAVE, Social e-Commerce Platform:** Conceptualised and built a Social eCommerce Platform to facilitate 'Team purchase' of online products using Django (python), JavaScriptm HTML5, CSS and MySQL
- **THAT, Hearing Assistance & Transcription:** Created a Flask-WebApp to enhance learning experience of students with hearing impairment