# 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

GPA: 9.42/10

#### Class XII - Central Board of Secondary Education

Ahmedabad, India Score: 93% 

### Class X - Central Board of Secondary Education

• 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 - Mar '22

- Carried out statistical analysis of data quality issues as a collection of patterns to improve performance of predictive process models
- Paper under review at 20th Intl. Conf. on Service-Oriented Computing

## 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: Natural Language Processing, Deep Learning, 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 & Longformer Encoder Decoder
- Proposed FinBERT-T5 paraphraser model with 13.3% ROUGE-2 gain & 8.5% less factual hallucination. Paper under review at EMNLP '22

## Multilingual News Article Similarity

Spring 2022

Prof. Pawan Goval, IIT Kharagpur

- 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

- 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

- Implemented a multi-tasking ensemble framework to jointly learn emotional classification and intensity prediction (regression) problems
- Leveraged the latent representations obtained from training 3 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

### THAT, Hearing Assistance & Transcription

Autumn 2020

Prof. Manjira Sinha, IIT Kharagpur

• Developed a WebApp using Flask (python) and JavaScript for improving learning experience of people with hearing impairment

• Built audio analysis driven speech assistance feature for oral skill development & Live Subtitles for lectures using Speech Recognition

# OTHER PROJECTS

- O 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
- GrowFast, Employee Management System: Developed an Employee management software using Java, JavaFX and MySQL
- Peer-to-Peer Chat Application for multiple network users using socket programming with TCP as underlying transport layer protocol
- TinyC Compiler: Wrote a Lexical Analyser in Flex, Semantic Parser in Bison and Machine Independent Code Generator

