Shashwat Bhardwaj

Master of Science by Research [MS(R)]
in Machine Intelligence and Data Science [MINDS]
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EDUCATION

Degree	Institute/Board	Branch	CGPA/Percentage	Year
Master of Science by Research	Indian Institute of Technology, Delhi	MINDS	Awaited	2023-2025
Bachelor of Technology	Maharaja Agrasen Institute of Technology, Delhi	CSE	7.46	2016-2020
Senior Secondary	Central Board of Secondary Education	PCM	86.0%	2016
Secondary	Indian Certificate of Secondary Education	PCM-Cs	95.16%	2014

EXPERIENCE

- **Application Development Associate at Accenture** *Feb 2021 - Nov 2021*
  IBM Ace Interface Developer Hyderabad, India
  – I worked on a middleware application IBM Ace and created message flows between two interfaces.
  – I was also involved in the testing of interfaces between systems like S4/Hana and Devex
  – Created Functional Specifications Documents (FSDs) and Technical Specification Documents (TSDs) to suit the business requirements.

INTERNSHIPS

- **Teaching Assistant at Coding Ninjas** *Jul 2019 - Nov 2019*
  TA, Interview Preparation- Java New Delhi, India
  – Cleared students' doubts and help them in writing error-free codes.
  – Suggested a better approach toward solutions by implementing time and space optimizations.
  – Assisted in setting problems on CodeZen- an online portal for practicing DSA

- **Deep Learning Intern at WishFin.com** *May 2019 - Jul 2019*
  Deep Learning Intern- Python New Delhi, India
  – Built intelligent chatbot for the company's Facebook page.
  – Did speech to text conversion using Google APIs.

- **Teaching Assistant at Coding Ninjas** *Sep 2018 - Jan 2019*
  TA, Data Structures and Algorithms- Java New Delhi, India
  – Cleared students' doubts and help them in writing error-free codes.
  – Suggested a better approach toward solutions by implementing time and space optimizations.

PROJECTS

- **Multi-label Text Classification using Encoder only Transformer Model** *Apr 2024*
  Prof. Tanmoy Chakraborty
  – The task was to split the dataset into the train, test and preferably validation datasets and train a deep learning model using the dataset to predict the class of the text.
  – Dataset consisted of an approximately 50,000 collection of research articles, described in terms of 14 labels.
  – Used RoBERTa model to perform the task.
  – Computed precision, recall and F1 scores for each class.

- **Text to Math Program using different Seq2Seq models** *Mar 2024-Apr 2024*
  Prof. Parag Singla
  – The task was to find a solution to the problem by applying mathematical reasoning on the input-text.
  – Performed Sequence to sequence translation by employing 4 different architectures- BiLSTM Encoder-Decoder, BiLSTM Encoder with Bahadnau Attention, Frozen BERT, Fine-tuned-BERT.

- **Image Classification using ResNet from scratch using different Normalization schemes from scratch** *Mar 2024-Apr 2024*
  Prof. Parag Singla
  – Implemented ResNet architecture from scratch to perform image classification on Birds 25, belonging to 25 different classes.
  – Also implemented 5 different normalization schemes- Batch Norm, Instance Norm, Batch-Instance-Norm, Layer-Norm, and Group Norm from scratch to understand impact of each norm type.

- **POS tagger using HMM and MEMM models** *Feb 2024*
  Prof. Tanmoy Chakraborty
  – The task was to perform POS tagging English sentences.

– Employed Hidden Markov and Maximum Entropy Markov Models from scratch to perform POS tagging.

- **Count of Objects prediction using Artificial Neural Network** *Nov 2023*
  Prof. Parag Singla
  – Implemented neural network architecture from scratch to predict the number of objects in the image.
  – Implemented the Back-Propagation algorithm from scratch without use of any predefined library.
  – Performed different experimentations by varying number of neurons in layer, depth of neural network.
  – Computed precision, recall and F1 scores for each class.

- **White Ball Cricket match Forecast using Decision Tree** *Nov 2023*
  Prof. Parag Singla
  – Implemented decision tree from scratch to predict the win/loss in a match.
  – Experimented with different depths, pruning with ccp_alpha parameters etc.
  – Also employed Random Forests with varying n_estimators, max_features, min_samples_split.
  – Finally found best parameters using Grid Search.

- **Inverted Index Information Retrieval System** *Apr 2023*
  Prof. Srikanta Bedathur
  – Developed an information retrieval system that constructs an **inverted index** from a collection of **XML documents** and utilizes **TF-IDF** (Term Frequency-Inverse Document Frequency) scoring for ranking search results
  – The system employs tokenization methods, builds an inverted index, and calculates TF-IDF scores to retrieve relevant documents based on user queries.

- **Covid-19 Visualization and Prediction** *May 2020*
  Self mode
  – This notebook tracks the spread of Covid-19, with various charts, graphs and ML Models

- **Fake news detector** *May 2020*
  Self mode
  – A simple fake news detector notebook with an accuracy of 99.97%
  – Employed Bidirectional LSTMs

TECHNICAL SKILLS

- **Programming Languages**: Java (Data Structures and Algorithms), Python(Machine Learning)
- **Programming Methodologies**: Object Oriented Programming in Java
- **ML Frameworks & Libraries:** PyTorch, TensorFlow, Keras, other helper libraries like numpy, pandas, matplotlib etc.
- **Tools and Technologies:** Tableu, Microsoft Power BI, Django (novice)

KEY COURSES TAKEN

- **Courses**: Mathematical Foundation of MINDS(AIL701), Machine Learning (COL774), Deep Learning (COL775), Deep Learning for Natural Language Processing (ELL884), Graph Machine Learning (AIL723), Advanced Machine Learning (ELL888), Selected Topics in Information Processing – II (Data Visualization)(ELL824), Ethical Consideration in MINDS (AIV790)

ALTERNATE CONTACT DETAILS

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