Debargho Basak

Master's Student

Motivated, hardworking, and driven computer science Master's Student with a track record in Software development and Machine Learning. Ability to identify business needs to develop software solutions to real-world problems. Seeking an opportunity to gain further experience in Machine Learning to drive business effectiveness through AI.

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WORK EXPERIENCE

Student Research Assistant
Fraunhofer AISEC

11/2022 - Present — *Garching, Germany*

Achievements/Tasks

- Performing cutting edge research at the intersection of Machine Learning, AI and Cybersecurity
- Aiding in the development of deep learning based security technologies to increase the reliability, trustworthiness and protection against manipulation (adverserial attacks) of Computer Vision and Perception software products

Natural Language Processing Research IDP Student (Interdisciplinary Project Course)
Convaise A.G.

05/2022 - 09/2022 — *Munich, Germany*

A Munich based AI startup that provides NLP based solutions for the industry using their no code platform.

Achievements/Tasks

- Developed a SOTA novel clause splitting approach in English and German to be integrated and deployed into the company's NLP software products
- Implemented an NLP pipeline combining the latest research in the fields of Text Simplification and Open Information Extraction to achieve clause splits using frameworks such as Hugging Face, PyTorch
- Performed model quantization and pruning to improve performance during deployment
- Deployed our solution to Kubernetes using Docker

Werkstudent
Siemens

02/2022 - 07/2022 — *Munich, Germany*

Achievements/Tasks

- Built a data visualization web app for internal usage within the firm
- Created active, functional and responsive user interfaces for smooth user experience
- Built landing pages for different data concepts containing interactive visualizations
- Integrated an API that fetched, parsed and formatted analytic data and relayed it to React components

SKILLS

Deep Learning | Computer Vision | Natural Language Processing | Image Segmentation | Object Detection and Tracking | 3D Dense Captioning | 3D Neural Rendering | Language Modelling | Machine Translation | Text2Text Generation | Text Summarization | Machine Learning | Software Engineering

TECH STACK

Programming
Python, C++, R, Javascript, MATLAB, Java

Tools & Frameworks
PyTorch, Hugging Face, Keras, OpenCV, SpaCy, Git, JAX, CUDA, ONNX Runtime

Database
SQL, MongoDB, Apache Spark

Operating Systems
Linux, Microsoft Windows, Ubuntu

Productivity
LibreOffice, Microsoft Office, LATEX

Other:
Kubernetes, Docker, FastAPI, AWS SageMaker, Bash

PUBLICATIONS

Research Paper

A Comparative Analysis of Intelligent Classifiers for Seizure Detection Using EEG Signals

Author(s)
Debargho Basak, Arshdeep Singh, Upmanyu Das, Priya Chugh, Dr. Jyoti Yadav
22/07/2021
Springer/Advanced Computing and Intelligent Technologies /577-591

https://lnkd.in/esWN7yj

WORK EXPERIENCE

Analyst
Bain and Company

06/2021 - 09/2021 *Gurgaon,India*

Achievements/Tasks

- Modelled data on Revenue, Sales, and Money flow data of Organizations
- Analysed Data thoroughly on Organization's structure, revenue streams, markets and customer bases using R, Python and Power BI
- Created interactive data reports and visuals that represent different findings and insights from the project
- Collaborated with other International Bain teams based out of USA, Poland and Australia

EDUCATION

Msc. Informatics
Technische Universität München

10/2021 - Present *München, Bayern, Deutschland*

Courses

- **Focus Areas:** Machine Learning, Deep Learning, Computer Vision, NLP and Software Engineering
- **Relevant Coursework:** Machine Learning,Computer Vision 3, Introduction to Deep Learning, Machine Learning for 3D geometry

B.E. in Instrumentation And Control Engineering
Netaji Subhas University Of Technology (erstwhile Netaji Subhas Institute of Technology) | University of Delhi

06/2017 - 07/2021 *New Delhi, India*

Courses

- **GPA**: 9.09/10(German equivalent = 1.4)
- **Focus Areas:** Software Engineering, Electronics and Robotics

KEY PROJECTS

Large Scale Differential Privacy Training (10/2022 - 03/2023)

- Training neural networks is crucially dependent on high-quality representative data. However, people who provide such data in sensitive contexts, such as medicine, expose themselves to privacy issues.To overcome this, mathematically provable techniques exist to limit the information, which can be extracted called Differential Privacy (DP) and its extension to neural network training (DPSGD). So far, training with such constraints has mainly been studied on small benchmark datasets. In this project, we evaluate the performance on larger real-world datasets (RadImageNet/TCIA Breast/Chexpert)
- **Frameworks used :** JAX, PyTorch, OpenCV

Exploring MLP based Architectures for Natural Language Tasks (10/2022 - 03/2023)

- Transformer based architectures are computationally quite expensive for long text due to the use of Self Attention which has a time complexity of O(n^2). Hence we explore the performance of MLP based models on long text (with a focus on legal text) by benchmarking their performance against LexGLUE Natural Language Understanding tasks
- **Frameworks used :** Hugging Face, PyTorch

YOLO Object-Detection (05/2019 - 05/2019)

- In This project we use YOLO is a state-of-the-art, real-time object detection algorithm. In this notebook, we will apply the YOLO algorithm to detect objects in images
- https://github.com/Debargho99/YOLO_Object-Detection

CERTIFICATES

Machine Learning A-Z™: Hands-On Python & R In Data Science (04/2021 - Present)

Credential ID:- UC-2f1eb491-88a3-45df-9c36-adbcfb97e668

LANGUAGES

English
Native or Bilingual Proficiency

French
Elementary Proficiency

German
Professional Working Proficiency

Italian
Limited Working Proficiency

INTERESTS/HOBBIES

Reading | Football | Video Games | Music