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Ankush Pratap Singh

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EDUCATION

New York University: Master of Science: Computer Engineering | GPA 3.778/4 **May 2023**

Netaji Subhas Institute of Technology: Bachelor of Engineering: Instrumentation and Control | GPA 7.53/10 **June 2017**

RESEARCH EXPERIENCE

Scene Summarization, New York University **Aug 2022 – Current**

- ➢ **[Python | NumPy |Matplotlib | Pytorch | Git]**
- Investigate on how to summarize the scenes using selected few key frames.
- Compare the performances and suitability of several deep learning based approaches.

Attention Based Neural Networks Display One Shot Perceptual Learning Effects, New York University **Aug 2022 – Current**

- ➢ **[Python | NumPy |Matplotlib | Pytorch | Git]**
- Assess one-shot learning capabilities of modern machine learning algorithms and human subjects with classification performance and psychophysics.

TEACHING AND WORK EXPERIENCE

Introduction To Machine Learning Course Assistant, New York University **Sept 2022 – Dec 2022**

- ➢ Hold office hours to clarify homework/exam questions and solutions. Create homework/exam solutions and grade them. Lead coding/debugging sessions and engage with students.

Real Time Embedded Systems Course Assistant, New York University **Jan 2022 – May 2022**

- ➢ Involved in preparing course content, homework, and grading for the class. Regularly held weekly office hours for teaching and doubt clearances. Mentored students on their final project.

Software Engineer, GO-MMT Goibibo Group **Jan 2019 – Apr 2021**

- ➢ **[Python | DJANGO framework | Kafka| REST APIs | Redis | Crontab | MongoDB | Git]**
- Worked on Hotel vertical, which required creating, storing, and maintaining hotels data from different vendors through backend (achieved near 100%).

- Worked upon improving image selection and image processing criteria for Hotel Search Result Pages which increased image visibility from 78% to 97%.
- Developed APIs which were used by various other teams as per their requirements, along with that, developed dashboards and panels for easier and smooth working of the marketing team for their different events, offers and other campaigns.
- Developed domestic and international destination verticals from scratch and handled Trains and Bus verticals as well and improved the overall SEO rankings, brought to 1 as well for many hotels and areas.

Software Engineer, Bhavna Software India Pvt Ltd. **Jun 2017 - May 2018**

➢ [**Angular 2 | Typescript | C#| .Net| MySQL]**

- Worked on different operations associated with Lease Module like Create, Read, Update, Delete (CRUD), importing, exporting, and maintaining all lease records and associated data.

SELF PROJECTS

Machine Learning/ Deep Learning Projects

➢ [**Python | NumPy |Matplotlib |MATLAB |Sklearn| Pytorch | Pyspark | Dask | Hadoop]**

- Developed Recommender Systems on MovieLens dataset (Big Data of 58000 movies and 280000 users) based on baseline Popularity and Collaborative Filtering models. These models were further compared on various ranking metrics like Precision ranking, Normalized Discounted Cumulative Gain, Root Mean Squared Error, and Catalog Coverage.
- Developed an extension to WaveNet architecture to generate music of various emotions and genres.
- Developed ResNet-18 architecture from scratch and selected the ResNet hyper-parameters to maximize test accuracy on CIFAR-10 while ensuring our model had less than 5 million trainable parameters. The developed model had an accuracy of 91%.

Real Time Embedded System Project

➢ [**C |C++ | mbed.h | Gyroscope | STM32F429I-discovery board microcontroller | Assembly Language]**

- Developed an Embedded system which focused on gathering, processing that data, and providing a useful representation of information.
- A wearable speedometer which calculated velocity by measuring angular velocities available from a gyroscope – without a GPS was designed and built. Strategically placing the sensor and microcontroller on the legs or feet can capture the angular velocities and with a bit of processing, convert those angular velocities to linear velocities and calculate distance traveled (a prototype of a Fitbit or Apple watch but without GPS and only Gyro). An accuracy of 86% was achieved.

TECHNICAL SKILLS

➢ **Programming and Frameworks**: Python (NumPy, Pandas, Matplotlib, Pytorch, Pyspark, Dask), Django, Hadoop, C, C++, Git

➢ **Databases:** MySQL, MongoDB