Rajdeep Biswas

Data Science / Machine Learning Engineering

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With a year of demonstrated ability to deliver reliable ML / DL applications working in R&D projects of a major product based company, and a background of high-quality independent research at college and company levels surrounding the areas of Time Series Analysis and Natural Language Processing, I wish to continue to push all boundaries in these areas and come up with innovative solutions via rigorous research and application.

Skills

Languages / Libraries: Python (Numpy, Pandas, Sklearn, Matplotlib), Tensorflow (Keras), Pytorch, MATLAB / Octave, Flask, C / Java (Core).

Areas: Sequence2Sequence NLP Models, Transformers, Unsupervised / Semi-Supervised Anomaly Detection, LSTM Autoencoders, Deep Learning, Machine Learning, Data Engineering, NLP Multilabel Classification, Ensemble Learning, RESTful Microservices, MVC Architecture, Backend Engineering & Model Deployment.

Work History

August 2020 - Present

Machine Learning Engineer

SAP Labs, Bangalore

Team: **Innovation Center Network** (Oct 2021 - Present)
• Presently at the feasibility check stage of an **NL2SQL** product. Assessing various pretrained models like GPT-J, T5 + WikiSQL, SQLNet, etc. on a limited training dataset.

Team: **API Management** (June - Dec 2021)
• Developed an **Anomaly Detection** service for API traffic across various Tenants. Wrote a Deep Learning model that uses an **LSTM Autoencoder** architecture. This used Tensorflow (Keras). Attained ~90% accuracy over 1 year of training data.
• Analyzed decomposition based libraries like Facebook-Prophet and Microsoft's SR-CNN. Containerized all three models via Docker carrying RESTful Flask applications, for an ensemble consensus-based outlier detection service.

Hackathon: **InnVent** (Sept - Oct 2021)
• Wrote a **Custom Transformer Sequence-to-Sequence** architecture for an **NL to Cloud CLI Commands Assistant** bot. Used PyTorch. Attained ~80% accuracy, on a dataset that was hand-curated majorly by myself from web resources..

Hackathon: **Innovision** (May - June 2021)
• Created an NLP **Multilabel Classification** pipeline which used a **Bidirectional LSTM** architecture using Tensorflow (Keras) in order to identify the type of service required based on a given sentence and predict a class.

Team: **Spend Visibility, Ariba** (Sept 2020 - Apr 2021)
• Tested various Time Series forecasting methods that SAP HANA Db PAL (Predictive Analysis Library) had to offer by writing a custom Python pipeline that analyzes the performance of eight of said algorithms.
• Implemented an expense forecast PoC with custom stored procedures written for time series prediction invoked via a SpringBoot backend.
• As a developer, implemented a feature change involving SpringBoot and Python that significantly minimized pipeline freezes caused by dataload limitations involving sizes of 1m+ of records.
• Took over various product bugfixes involving SpringBoot, Angular and Python.

June - August, 2019

Intern

SAP Labs, Bangalore

• For **CoPilot**, assessed the performance of various ML clustering and classification algorithms on matching intents and contributed to its NLP pipeline.
• Took up various bugfixes on the frontend of the product, based on ReactJS. Responded to and fixed multiple internal and customer incidents and backlogs.
• Contributed in migration of a few modules of the product's backend from Ruby to Java SpringBoot, a microservices framework.

Publications

• COVID-19 Prediction Effectiveness Time Series and Lockdown. **International Conference on Computational Intelligence in Data Mining (ICCIDM) 2021**. (Submission concluded. Presentation incoming in Dec, 2021).
• Predictive Analysis of the Recovery Rate From Coronavirus. **International Conference on Cyber Intelligence and Information Retrieval (CIIR), 2020**. (Done in collaboration with Master's seniors during final year of college).

Education

2017 - 2020

Bachelor of Computer Application

Institute of Engineering & Management. 8.89 DGPA.