Srinivas Gowriraj

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EDUCATION

Carnegie Mellon University - School of Computer Science Pittsburgh, PA
Master of Science in Intelligent Information Systems Dec 2023
Selected Coursework: Multimodal Machine Learning, Advance Natural Language Processing

Chaitanya Bharathi Institute of Technology Hyderabad, India
Bachelor of Engineering in Information Technology Jun 2020
Selected Coursework: Data Structures and Algorithms, Python, Java, Database Management, Data Mining

WORK EXPERIENCE

ServiceNow Hyderabad, India
Software Engineer Aug 2021 – Jul 2022
- Enhanced ServiceNow's English-based virtual agent to support 100+ languages by translating annotations from English to the target languages.
- Fine-tuned ServiceNow's **Natural Language Understanding** (NLU) model on the ITSM customer's data and improved the **Intent and Entity Recognition** score by 30%.
- Developed a **Explainable-AI (XAI)** dashboard and generated intuitive plots to explain the NLU model predictions to non-tech persona's.
- Provided training on **ML Usecases** to internal employees and increased ML adoption across various business units.

Associate Software Engineer Jun 2020 – Aug 2021
- Pioneered an incident-problem-change correlation PoC model in ServiceNow's ATG Hackathon and converted the PoC to a product with 2 sprints.
- Collaborated with cross-team(DevOps) and engineered a **Decision Tree** classification model to predict build failures.
- Integrated the various ML models into **Predictive Intelligence Workbench** (PIW) and facilitated customers in using Out-of-the-Box ML models
- Built a PRIME-Bot to aid ServiceNow's employees in finding covid related resources during 2nd wave of covid. The Bot scraped the data from government sites, social media handles and updated the database with real-time information.

Software Development Intern Jan 2020 – Jun 2020
- Created a **Linear Regression** model to estimate the total time required to close a ServiceNow ticket.
- Transformed the standard change template identification from manual to automatic by deploying a **Similarity-based Model** and reduced the false negatives by 50%
- Analysed customer incidents and engineered a **Topic Recommendation Framework**.

PROJECTS

Towards Multimodal Compositional Reasoning on Winoground
- Developed a novel method to create the **Hard Negatives** for images and captions by shuffling the nouns, adjectives, adverbs and trigrams in the captions and image-patches in the images.
- Trained a **CLIP Model** using the augmented data and **Contrastive Loss** function, and increased the group score by 30%.
- Modified the CLIP architecture by adding **Adapter Layer** consisting of **LSTM's** into the CLIP encoder layers and generated the information rich text embeddings through fusing the CLIP's encoder embeddings and LSTM embeddings.

Optimal Resource Allocation for Multilingual Finetuning
- Devised an **Active Learning** based-algorithm to rank the data points from set of source languages from XNLI dataset and obtained the maximum performance on the low resource target language by labelling only 10% of the training data.
- Designed ranker uses the annealing approach to assign the probabilities to **Uncertainty** and **Similarity** which are further used in ranking the unlabelled data points from source languages.

End to End Scientific Entity Recognition
- Constructed a scientific **Named Entity Recognition Dataset** from scratch by scrapping the data from ACL papers.
- Fine-tuned the **Sci-DeBERTa Language Model** on the annotated data and improved the F1 score by 20%.
- Performed the **Continual Learning** on the Sci-DeBERTa using the TDM dataset and further enhanced F1 score by 30%.

Person Tracking
- Performed zero-shot person detection using **YOLOv7** and developed an efficient person re-identification algorithm using the state-of-the-art **Vision Transformer (ViT)**.
- Performed the **Dimensionality Reduction** on ViT's embeddings and clustered them dynamically using **HDBSCAN.**

SKILLS

- **Programming Languages:** Python, SQL, Java, R, HTML, CSS, JavaScript, LaTeX
- **Other Technologies:** PyTorch, TensorFlow, AWS, Angular, React, Django, GIT.

PUBLICATIONS

- **Srinivas Gouryraj,** Sakshi Kataria, Jeba Swvigaradoss. "**Auto Identification of Problems and Change Requests in ServiceNow**". IEEE ICIRCA 2021.
- **Srinivas Gouryraj,** Sakshi Kataria, Jeba Swvigaradoss. "**Service Level Agreement Breach Prediction in ServiceNow**". IEEE ICIRCA 2021.
- Venkata Vamsi Medidi, **Srinivas Gouryraj**, Trupthi M. "**AutoJotting: A Notes Maker**". IJRASET 2021.