Jayant Sravan Tamarapalli

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Education

Carnegie Mellon University - School of Computer Science May 2021 – December 2022
Master of Computational Data Science - GPA: 4.19/4 *Pittsburgh, PA*
Relevant Coursework: Machine Learning, Data Science, Machine Learning for Robotics

Birla Institute of Technology and Science (BITS), Pilani August 2015 – May 2019
B.E. (Hons.) in Computer Science - CGPA: 9.75/10 - Class position: 4^{th}/750 students *Hyderabad, India*

Professional Experience

Microsoft R&D Pvt. Ltd. July, 2019 – August, 2021
Software Engineer *Hyderabad, India*

- Designed and implemented the Search Insights and Analytics framework for O365 Exchange Admin Center that enabled the admins of 1M+ tenants to make data-driven decisions that helped improve user search experience.
- Developed a Scenario Validation Framework for the same and made it compliant with various security and privacy standards required for deploying into U.S. Department of Defense Office 365 cloud.
- Spearheaded the implementation of Product Recommender System in the Microsoft Partner Co-sell website. This increased the user engagement on the website by 82% which translates to higher revenue for Microsoft through Co-sell.

Research Experience

Carnegie Mellon University January 2022 - Present
Autonomous Racing *Pittsburgh, USA*

- Building Safe Reinforcement Learning Techniques to teach an autonomous vehicle to race using the Learn-to-race platform. This project is supervised by Prof. Eric Nyberg and Jonathan Francis.

BITS Pilani January 2018 - December 2018
Named Entity Recognition & Classification for Telugu Language *Hyderabad, India*

- Collaborated with Prof. N. L. Bhanumurthy to compare the performance of different SoTA word/phrase embedding techniques (Word2Vec, GloVe, ELMo) in NERC for Telugu language using bi-directional LSTMs.
- Achieved improvements in recognizing Person names and Location names while maintaining competitive performance in other fields by using ELMo and annotating a new corpus.

Inter-University Center for Astronomy and Astrophysics May 2017 - August 2017
Short Gamma-Ray Burst (GRB) Detection *Pune, India*

- Developed Short GRB detection program with Prof. Dipankar Bhattacharya using wavelet transforms and SVMs on images from the Indian multi-wavelength satellite observatory, ASTROSAT. The model achieved an accuracy of 95.8% on the images available till 2017 and the it is currently operational on ASTROSAT.

Projects

Deep Q-Networks, PPO, TRPO, and VPG for Gym Environments CMU | December 2021

- Implemented Deep Q-networks and policy gradient methods like Proximal Policy Optimization, Trust Region Policy Optimization, and Vanilla Policy Gradients to solve various Gym environments.
- Created RL agents for Atari environments like Breakout, Flappy Bird, and Boxing apart from solving classic environments like Cartpole, Pendulum, etc.

Public API for Question Answering system on SQuAD dataset CMU | August 2021

- Implemented an algorithm for single-hop Question Answering on the SQuAD dataset with 100,000 questions using BertForQuestionAnswering and rsvp-ai/bertserini tokenizer from Huggingface to obtain an accuracy of 70%.
- Deployed the model on a public endpoint using Azure ML Workspace and Webservice.

Cervical Cancer detection on Pap-smear dataset using YOLO-v3 Microsoft | August 2020

- Developed a deep learning model to detect areas of interests in pap-smear slides using YOLO-v3 algorithm. It increased the Inter-observer Agreement (probability of two radiologists agreeing on the diagnosis) from 34% to 79%.

Skills

Programming: Python, C++, C#, SQL
Libraries and Frameworks: PyTorch, Tensorflow, Keras, Numpy, Pandas, Scikit-learn, Huggingface, NLTK, .NET, Azure