Chaitree Baradkar

MSc Cognitive Science student – Machine Learning

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Self-motivated, curious, and hard-working student currently pursuing **MSc in cognitive science** with research interest in **Cognitive Neuroscience, Cognitive Modeling and Artificial Intelligence**. I have **4+ years of professional experience** in **Machine Learning, Deep Learning** mainly in areas of Convolutional Neural Networks for perception systems in self-driving cars, Time Series Analysis, and predictive modeling using text data.

Skills

Python, C++, Neural Networks, SQL, Caffe, Tensorflow, Linux OS, GIT, OpenCV, ROS (Robot Operating System), Python Libraries – scikit-learn, pandas, numpy, pyOD, tslearn, Statsmodel, pmdarima, xgboost, Tensorflow + Keras for LSTM.

Input towards organization

Researching, implementing and testing Deep Learning methods to improve the accuracy and execution speed of the modules. Deploying complete machine learning tools along with data preprocessing and visualizations with the help of team that led to better decision making and cost saving.

Work History

Data Scientist - PharmaACE | Pune | India
July 2019 – May 2021

- Developing, training and testing different Machine Learning algorithms such as SVM, XGBoost, LSTMs for accurately predicting the progression in line of treatment in patients using medical claims data.
- Performing data preparation, feature selection, feature building for predictive modeling using medical claims data.
- Providing comprehensive analysis for the ad-hoc queries using different datasets for medical claims.
- Mentored two internship projects in the area of NLP semantic search and parameter optimization for statistical time series forecasting algorithms.
- Supported secondary projects which involved trending events in time series forecasting with implementation of the statistical algorithm from scratch and testing.
- Deployed into production time series forecasting tool to forecast accurate demand of drug volumes using Machine Learning and the Statistical Algorithms which led to significant cost saving in storage and inventory.
- Delivered a novel proof of concept that categorizes drug markets using Machine Learning algorithms for time series clustering on historical sales data.

Senior Engineer, R&D, Autonomous Vehicle Program -Tata Elxsi | Bangalore | India
July 2018 – June 2019

- Researched, developed, trained and tested lane detection, Semantic and instance segmentation of objects modules using Convolutional Neural Networks to achieve better performance than existing computer vision algorithms.
- Performed data collection, data annotation, data preparation and transfer learning of developed Object Detection and Classification module to achieve targeted accuracy on Indian Road Datasets.

Engineer, R&D, Autonomous Vehicle Program - Tata Elxsi | Bangalore | India
July 2016 – June 2018

- Developed, deployed, tested and fine-tuned weighted multi-CNN trained novel traffic Sign Recognition module that achieved a near state-of-the- art recognition rate of 99.5%.
- Researched, developed, trained, tested and compared different state-of- art Object Detection and Classification models using Convolutional Neural Network and achieved target accuracy and execution time.
- Deployed and tested end to end learning for steering angle control of Self-Driving Cars module using Convolutional Neural Networks in real time.
- Optimized the developed CNN algorithms for NVIDIA GPU platforms and improved the execution time and memory required for storing the Neural Network models.
- Performed end to end real time testing of the developed algorithms that also includes collecting images from camera, processing those images and integrating developed algorithms with other modules using ROS.

Education

Master of Science: Cognitive Science – Indian Institute of Technology, Delhi, India.
August 2021 - Current
First semester SGPA – 9.00

Bachelor of Technology: Electronics and Communication Engineering - Visvesvaraya National Institute of Technology, Nagpur, India
July 2012 – June 2016
CGPA – 8.67

Publications

- Sudha Natarajan, Abhishek Kumar Annamraju, Chaitree Sham Baradkar. (2018). "Traffic Sign Recognition using Weighted Multi-Convolutional Neural Network." *IET Intelligent Transport Systems*, Vol 12, Issue 10, December 18, doi:10.1049/iet-its.2018.5171.
- Chaitree Baradkar, Aishwarya Ganveer, Shyamlee Lokhande and K. Surender. (2016). "Fuzzy Approach for Examining the Performance of Driver." *International Journal of Advanced Research in Computer and Communication Engineering*, Vol. 5, Issue 7, July 2016, pp, 1,4, doi: 10.17148/IJARCCE.2016.57132

Achievements

- Successful completed DeepLearning.AI "Deep Learning Specialization" from Coursera.org.
- Project Excellence Award for Autonomai (IP Initiative) (Jan 2017 – Dec 2017)
- Music – Completed four levels of Hindustani Classical Singing from Akhil Bharatiya Gandhrav Mahavidyalaya, Pune, India (November 2001 – April 2006)
- Qualified National Talent Search Examination (NTSE) (June 2008)