Prathyush S Parvatharaju

AI Engineer | Journeyman Fellow at U.S. Army CCDC Army Research Laboratory

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- Ingenious AI Engineer with strong leadership background and 5+ years of experience in designing scalable end-to-end AI pipelines from pure research to minimum viable products to scalable production-ready deployments
- Pioneered black-box model explanations for deep time series classifiers, active explainers for CNN's, state-of-the-art distributed Deep-learning & Reinforcement-learning libraries, and architected Context-Aware Shared Agile Platform
- Seeking to leverage my knowledge and mentoring experience into a senior engineering role

EDUCATION

Master of Science in Data Science | Aug 2019 – Dec 2021, Worcester Polytechnic Institute (GPA: 4.0)
Bachelor of Engineering in Electronics and Communication | May 2011 – May 2015, VT University (GPA: 3.7)

RELEVANT COURSEWORK

Machine Learning, Deeplearning, Reinforcement Learning, Big Data Analytics, AutoML, and Statistics

SKILLS

Languages - Python, Javascript, Java, C++, C, R, HTML
Machine Learning - SVM, RandomForests, Regression, XGBoost, PCA, t-SNE, NeuralNets, Reinforcement Learning
ML Ops - Docker, Kubernetes, Weights and Biases, Airflow, TensorflowX, DVC, Jenkins
Frameworks - PyTorch, TensorFlow, Keras, Flask, OpenCV, Pandas, Numpy, Sklearn, PySpark, ReactJS, FastAPI
Databases - Mysql, MongoDB, Neo4J, Redis
Big Data - Spark, OpenMPI, CUDA, Hadoop, Kafka, Horovod (distributed deep learning)
Project Management - Jira, Confluence

PROFESSIONAL EXPERIENCE

U.S. ARMY CCDC ARMY RESEARCH LABORATORY, MA — *Journeyman Fellow* | Aug 2020 – Present, 1 Yr

- Trained and supervised a 20-member team handling applied machine learning research projects on Adhesives, Corrosion, Aviation & Missile Technology, and Cold Spray
- Architect of Context-Aware Shared Agile Platform (ARL-CAAP) aimed at smart material discovery with Human-in-the-loop based active learning - **Platform AI**

RAZORTHINK TECHNOLOGIES, INDIA — *AI Engineer* | Aug 2015 – Aug 2019, 4 Yrs

- Developed state-of-the-art distributed modeling library (model-design, training, inference, and deployment), scalable data pipelines, blueprint architecture, transfer learning, shared - states, memory and action spaces - **Platform AI**
- Efficiently scaled *CRNNs* using transfer learning, data augmentation, and data parallelism to train 9 million images of 50 fonts and 104 characters, achieved 97% accuracy in recognizing alphanumeric words, *saving 250K annually* for India's largest lender - **Computer Vision**
- Lead a team of professionals to design, develop and deploy a *LSTM model* to predict customer churn by analyzing demographics & skewed transactional data and achieved a GINI score of 68, resulting in a *40% reduced churn rate*
- Devised a *multi-stage CNN for multidimensional time-series* data along with achieving over a GINI score of 72 in predicting customer propensity to buy insurance, increasing the revenue by *8 folds* for our banking clients

PUBLICATIONS

P Parvatharaju, R Doddaiah, T. Hartvigsen, E. Rundenstiner, **Learning Saliency Maps to Explain Deep Time Series Classifiers**, CIKM '21 (21.7% acceptance rate), QLD, Australia | Paper | Video | Slides | Poster | Github

P. Parvatharaju, S. Murthy, **Differential Learning using Neural Network Pruning**, CORR'21* | Slides | Paper | Github

PRESENTATIONS

Distributed training of Deep Neural Networks | Analysis of Variance

ASK ME ABOUT - PERT, ARL-CAAP, End-To-End AI Pipelines, Distributed RL, TF Contrib, USound, Curiosity Learning