

Prathyush S Parvatharaju

Director, Machine Learning Engineering at CodaMetrix | Adjunct Lecturer at WPI

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- Visionary technology leader with a proven track record of building and scaling high-performing ML Engineering teams
- Ingenious AI Engineer with strong leadership background and 9+ 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 CNNs, 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, 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, Hyper-Parameter Tuning

Frameworks - PyTorch, TensorFlow, Keras, Flask, OpenCV, Pandas, Numpy, Sklearn, PySpark, ReactJS, FastAPI

Databases - MySQL, MongoDB, Delta Lake

Big Data - S3, Spark, OpenMPI, Hadoop, Kafka, Horovod (distributed deep learning), Databricks

Project Management - Agile, Scrum, Kanban, Jira, Confluence

PROFESSIONAL EXPERIENCE

CODAMETRIX, MA — *Director, Machine Learning Engineering* | Feb 2022 – Present, 3 Yr

- Lead and scale high-performing ML Engineering teams to drive innovation and deliver strategic business outcomes
- Architect and implement scalable ML infrastructure to optimize model training, deployment, monitoring, and maintenance for healthcare applications
- Establish and enforce MLOps best practices, ensuring robust model lifecycle management and operational efficiency
- Collaborate closely with Machine Learning Research, Data Intelligence, Engineering, and Product teams to align initiatives and manage cross-team dependencies
- Responsible for designing scalable NLP and machine learning pipelines leveraging AWS and Databricks ecosystems with support for data science-specific CI/CD - **Platform AI**

WPI, MA — *Adjunct Faculty, Department of Data Science* | Aug 2022 – Jan 2023, 6 M

- Teach graduate level course - Big Data Management (CS585 / DS503) with a focus on scalable ML Pipelines
- Topics include - Hadoop, Hive, Spark, Kafka, ZooKeeper, Structured Streaming, MongoDB, OpenMPI, Tensorflow, Horovod

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, ER Robert Jensen, Kimberly Brady, Biao Yin, Fatemeh, **Context Aware Agile Platform**, DEVCOM Army Research Laboratory '23, US Army CCDC Laboratory | [Paper](#)

P. Parvatharaju, R Doddaiiah, T. Hartvigsen, E. Rundenstiner, **Class-specific explainability for deep time series classifiers Series Classifiers**, ICDM '22 (17.6% acceptance rate), Orlando, Florida, USA | [Paper](#)

P. Parvatharaju, R Doddaiiah, 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](#)