Pradeep Bolleddu

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Sanjose, California - 90032,USA

CORE COMPETENCE

• Strong research background in computer vision and image processing, including multi-cameras, multiviews 3D computer vision, content-based image/video retrieval, mobile augmented reality, image synthesis and object segmentation.
• Strong research background in machine learning, including supervised and unsupervised learning, image/video concept modeling, sequence data mining, and deep learning.
• Solid hands-on knowledge and experience on developing large-scale applications across platforms, code optimization and performance analysis.
• Great team player with excellent interpersonal and communication skills.

EXPERIENCE

• **Instaworks Inc [], []** *Sep 2024 – Present*
Applied Scientist San Francisco, USA
◦ Addressed **45%** false positives in legacy transaction monitoring system. Engineered Python/TensorFlow models (XGBoost, Isolation Forest) with AWS SageMaker pipelines; Deployed monitoring via ***MLflow*** to Reduce false positives by **62%** while maintaining **98%** recall,Accelerating model deployment cycle from **6** weeks to **9** days.
◦ Solved **70%** unresolved queries in a chatbot system requiring cross-domain knowledge. Designed a OpenAI GPT-4 API ***RAG System*** with Hugging Face embeddings,Document AI (OCR Processor, Form Parser), Pinecone vectorDB, & LangChain orchestration and Achieved **89**% first-contact resolution (**+49%** YoY), cutting average handle time by **40%** (**$500K** annual savings).
◦ Developled a Multimodal knowledge graph system using Graph Attention Networks and cross-modal alignment (structured transactions + unstructured sentiment data) to enable Real-time dynamic risk assessment and personalized investment strategies, boosting fraud detection accuracy by **40**% while identifying investments.

• **UMass Chan Medical School []** *Nov 2023 – June 2024*
Machine Learning Researcher Delhi, India
◦ Implemented Image classification techniques on cancer datasets by Analyzing **5K+** merged brain MRI images through an Cloud based ***ETL*** pipeline on Google Cloud Platform using ***Cloud Dataflow***. Achieved **97%** accuracy which significantly Improved Diagnostic precision for oncology teams.
◦ Designed a Bayesian-optimized ensemble (***XGBoost, CNN, Autoencoder***) for cancer prognosis, Achieving a **0.987** F1 score (**18**% fewer false positives) and Enabling personalized treatment plans for **20K+** annual patients.

• **The Perfect Future - A Sales force Company []** *Nov 2020 – April 2021*
Data Engineering Intern Remote
◦ Developed 13 Tableau dashboards for Marketing Analytics and 6 Power BI dashboards for Financial reporting which enhanced CRMs trategies by 20% and collaborating with sales to boost conversion rates by 15%.
◦ Automated Database Operations Using Azure SQL Database by increasing operational efficiency by 20% through 170+ CRUD operations, 20 database triggers, and 10 stored procedures for data management & delivered actionable insights through Looker Studio for Reporting.
◦ Designed and trained a user classification model specifically for ranking systems within the A/B testing framework, leading to a 40% increase in test sensitivity and a more accurate evaluation of ranking search model performance.

EDUCATION

• **University Of Massachusetts** *July 2023 - Aug 2024*
Masters Degree Dartmouth, USA
◦ GPA: 3.7/4.00

• **Indian Institute of Technology Ropar** *May 2023*
Bachelors Degree Punjab, India
◦ GPA:3.5/4.00

RESEARCH AND PUBLICATIONS

C=CONFERENCE, J=JOURNAL, R=RESEARCH, S=IN SUBMISSION, T=THESIS

[C.1] Pradeep Bolleddu. (2022). **An analysis of clustering techniques**. In *International journal of Computer science and engineering and information technology Proceedings*, Volume 8, Issue 2 & Pgno: 52-57

[S.1] (2025). **Self-Sustaining Artificial Generative Systems: Exploring Autonomous Meta-Learning and Cross-Domain Knowledge Fusion.**. Manuscript submitted for publication in *Journal- IEEE neural transactions.*

[S.1] (2025). **Neuro-Symbolic Large Action Models: A Unified Theoretical Framework for Generalizable AI Across Vision, Language, and Robotics**. Manuscript submitted for publication in *Springer journal ML.* .

[J.1] PradeepBolleddu (2022). **Hadoop: An Overview of Data security**. *Journal of Science & technology*, Vol. 11 & Issue3, March2022.

Skills

- **Programming Languages:** Python, PgSQL(SQL server),R, Scala
- **Web Technologies:** Javascript, Flask, Django, REST API,HTML,CSS
- **Database Systems:** Oracle, SQL server, Neo4j & Vector Databases.
- **Cloud Technologies:** AWS, Cloud operations Cloud Platform 3
- **DevOps & Version Control:** ArgoCD,Terraform ,Github Actions(CI/CD)
- **Specialized Area:** Data science, Machine learning,Statistics, Artificial Intelligence.
- **Mathematical & Statistical Tools:** MATLAB,R, Data Miner,Stata
- **Other Tools & Technologies:** PowerBI, Tableau,Advance Excel.
- **Research Interests:** Multimodal AI, Machine learning Operations,AGI,Deep learning & Data science.

Professional Memberships

- **Association for Computing Machinery (ACM) - SIGAI** *Dec 2024 - Present*
- **Microsoft AI MVP** *Jan 2025 - Present*
- **International Association for Statistical Computing (IASC)**, Membership ID: 1738569867 *Feb 2025 - Present*

References

1. **Dr Shashi Kuamr Jha**
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   Indian Institution Technology Ropar
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2. **Dr Prabhakar**
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   University of Massachusetts Dartmouth
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   Relationship:Part-time Manager