Manu Somasagar Kamalakar

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Professional Summary

Results-driven product lead and senior machine learning engineer with nearly 6 years of experience in developing and deploying machine learning applications. Skilled in data science, deep learning, and ML frameworks with strong data analysis, manipulation, and visualization abilities. Proven track record of delivering impactful ML solutions across various domains, including financial markets, fraud detection, forecasting, and the automobile industry. Proficient in Agile methodologies, DevOps, CI/CD, and version control. Strong project management, team leadership, and stakeholder collaboration skills to drive innovation and success.

Work Experience   6 Years

Fraunhofer ITWM – Kaiserslautern, Germany

Product Lead Engineer   *Jan 2024 – Present*
- Leading the development of an ML application to optimize financial projections across car markets.
- Built an auto-evaluation method to detect price adjustments, reducing financial risks by ~10%.
- Developed forecasting models, warning systems, and interactive R-Shiny dashboards.
- Implemented back-testing to assess ML model performance.
- Performing requirement analysis and stakeholder collaboration to align project objectives.

Senior Machine Learning Engineer   *Oct 2021 – Dec 2023*
- Designed and implemented a novel metric to quantify dataset similarity, evaluate the behavior of anomaly detection algorithms, and identify the potential best algorithms for unsupervised data.
- Engineered an ML-based fraud detection system for a prominent European car manufacturer.
- Created a Weibull analysis-based app to forecast car failure rates, boosting resource allocation by ~20%.
- Developed a Federated Machine Learning model for an IoT use case, ensuring data privacy.
- Enhanced model performance and scalability through testing, hyperparameter tuning, and advanced algorithms, ensuring high accuracy in production.
- Utilized Docker and Kubernetes for ML pipeline construction and CI/CD implementation.

Société Générale GSC - Bengaluru, India

Software Engineer   *Apr 2017 - Aug 2019*
- Created a Flask application to facilitate the source code migration from SVN to GitHub.
- Developed an ML-based chatbot.
- Mentored multiple teams on DevOps principles, leading to a 25% increase in CI/CD adoption.
- Architected CI-CD pipelines for multiple teams achieving a 20% faster application delivery.
- Implemented automated tests for projects using Selenium and UFT.

Rantya Soft Pvt Ltd. - Bengaluru, India

Trainee- Full Stack   *Sep 2016 - Mar 2017*
- Assisted in building Cordl, a practice management software, by collaborating on key development tasks within a dynamic startup setting.
- Supported in full-cycle development with PHP, HTML, and JavaScript, aiming for high-quality functionality and user experience.

Education

RPTU Kaiserslautern, Germany
M.Sc. Computer Science   *Oct 2019 - Sep 2021*

KSIT, Bengaluru, India
B.E. Computer Science and Engineering   *Aug 2012 - Aug 2016*

Projects

- **Master's Thesis: Federated Learning for Fraud Detection**
  Developed a federated learning model to detect fraud in financial transactions, addressing security, and privacy challenges.
- **Master's Project: Deep Digit Recognition**
  Designed a model to recognize and locate digits in natural scene images.
- **COVID-19 Prediction**
  Analyzed data and created SIR models to simulate the spread of the virus.
- **Bachelor's Project:**
  A Data Mapping Strategy for Parallel Data Mining Nodes in Grid Connected to a Storage Cloud.

Skills

Technical Skills:
- Research, Machine Learning, Deep Learning, Artificial Intelligence.
- Supervised ML, Unsupervised ML, Anomaly Detection, Federated Machine Learning.
- Data Science, Data Analysis, Data Visualization, Time Series Analysis.

Frameworks and Libraries:
- PyTorch, TensorFlow, NumPy, Pandas, Scikit-Learn.
- Django, Flask, R-Shiny, CUDA, Open-CV, Git.

Management:
- Scrum, Agile, Leadership, Time Management, Problem Solving, Jira, Confluence.

Programming Languages:
- Python, R, Bash, SQL.

DevOps and CI/CD:
- Docker, Docker Compose, Kubernetes, Jenkins, Ansible.

Other Achievements

- Writing research papers on anomaly detection.
- Presented a talk at the "ICORS meets DSSV 2024" conference in Fairfax, Virginia.
- Participated in the All-India DevOps Conference conducted by the DevOps Institute.

References

- Dr. habil. Jörg Wenzel, Fraunhofer ITWM, Head of the Department of Financial Mathematics.
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- Nivarti Jayaram, Société Générale Global Solution Centre, Delivery Head and Chief Data Officer.
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