

Mehul Mittal

AI/ML Engineer & Data Engineer | Production ML & GenAI Solutions

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Fürth, Bavaria (Open to Relocation)



Professional Summary

AI/ML Engineer and Data Engineer with hands-on experience building and deploying end-to-end machine learning products and data platforms from research to production. Proven track record in developing scalable data pipelines, ML systems, GenAI applications, and agent-based solutions on Azure and AWS. Skilled in data engineering fundamentals (Apache Spark, PySpark, ETL/ELT) and MLOps practices including model registry, feature stores, and CI/CD automation. Strong foundation in Python development, with expertise in both classical ML and modern LLM-based solutions. Experience leading cross-functional teams and translating business requirements into robust AI and data products. Passionate about applying cutting-edge AI technologies and data engineering best practices to solve real-world business problems.

Experience

Data Platform Engineer (Working Student)

Robert Bosch | Mar 2025 – Sep 2025 | Abstatt, Germany

- **ML Infrastructure:** Contributed to cloud-native data and ML infrastructure on AWS, supporting scalable ML model training and deployment for global engineering teams
- **MLOps Automation:** Built and maintained CI/CD pipelines using GitHub Actions and Docker for automated ML model deployment and monitoring
- **Production Optimization:** Analyzed and optimized cloud resources (Lambda, EC2) for ML workloads, contributing to 25% infrastructure cost reduction while maintaining system reliability
- **Cross-Functional Collaboration:** Worked closely with data scientists and ML engineers to ensure platform readiness for AI/ML experimentation and production deployment

AI Research Engineer (Working Student)

Machine Learning Lab, FAU | Mar 2024 – Apr 2025 | Erlangen, Germany

- Built and validated ML models for detecting Freeze of Gait (FoG) using wearable sensor data
- Applied signal preprocessing and model evaluation in real-time pipelines for healthcare applications
- Leading research that merges machine learning with healthcare, to achieve unparalleled accuracy in real-time identification of freeze events
- Collaborating with interdisciplinary teams to enhance model accuracy and robustness

Lead Data Engineer

Concentrix | Oct 2021 – Feb 2023 | Gurgaon, India

- **AI Product Ownership:** Led scrum team delivering an ML-powered workforce optimization platform serving 200+ stakeholders with real-time predictive insights
- **Production ML Pipelines:** Architected and maintained scalable ETL/ML pipelines processing large operational datasets, leveraging distributed computing for business-critical analytics
- **Business Impact:** Delivered measurable ROI of ~€2M annually through data-driven ML solutions for resource optimization and predictive analytics
- **Stakeholder Management:** Collaborated with cross-functional teams and senior leadership to translate business requirements into ML-driven technical solutions
- **Agile Delivery:** Championed Agile/SAFe methodologies, facilitating sprint planning and serving as technical liaison between ML engineering and business teams

ML Engineering Intern

Mirrarg AI | Sep 2021 – Nov 2021 | Mumbai, India

- **MLOps Foundation:** Established Git workflows and CI/CD pipelines for automated ML model testing and deployment in startup environment
- **Production Standards:** Implemented coding standards and version control for ML data processing pipelines, ensuring enterprise-grade code quality

Technical Projects

Transfer Learning for Neural Signal Processing

Master's Thesis | May 2024 – Nov 2025

- **End-to-End ML Product:** Engineered complete ML pipeline from data ingestion to model deployment, processing 1M+ neurophysiological samples with automated quality validation
- **MLOps Best Practices:** Implemented production-grade infrastructure with MLflow (experiment tracking, model registry), DVC (data versioning), and Docker containerization for reproducible ML workflows
- **Model Development:** Built and optimized deep neural architectures (EEGNet, EEGConformer, ATCNet) with distributed training strategies, balancing model performance with production deployment constraints
- **AI Research:** Applied domain adaptation algorithms (DANN, contrastive learning) and generative approaches to achieve cross-subject generalization, addressing data heterogeneity in production ML systems

Healthcare Analytics with GenAI

Academic Capstone | Oct 2024 – Apr 2025

- **GenAI Integration:** Designed end-to-end analytics pipeline integrating LLM-based medical text processing with MLflow 3.0 for experiment management and governance
- **Production Monitoring:** Implemented automated monitoring for model drift detection and performance degradation in regulated healthcare environments
- **Compliance-Focused MLOps:** Built ML pipeline adhering to healthcare regulatory standards with comprehensive data governance and audit trails

Education

M.Sc. in Artificial Intelligence

Friedrich Alexander University Erlangen-Nuremberg | Apr 2023 – Dec 2025 (Completed)

Focus: Machine Learning Systems, Deep Learning, MLOps, Cloud Architecture

Awarded FAU Graduation Scholarship (December 2025) for academic excellence

B.Tech in Information Technology

Guru Gobind Singh Indraprastha University | Aug 2018 – Jun 2022

Capstone: Team Lead for Distributed System Implementation

Technical Skills

ML/AI Development: Python (Expert), PyTorch, TensorFlow, Scikit-learn, Classical ML, Deep Learning, GenAI, LLMs, Embeddings, RAG, Agent Workflows

MLOps & Deployment: MLflow (Model Registry, Feature Store), DVC, Docker, Kubernetes, CI/CD (GitHub Actions, Jenkins), Model Monitoring, A/B Testing

Cloud Platforms: Azure (Azure ML, AKS, Azure AI Foundry concepts), AWS (SageMaker, S3, EC2, Lambda), Databricks, Cloud-Native ML Architecture

Data Engineering: Apache Spark, PySpark, SQL, ETL/ELT Frameworks, Delta Lake, Kafka, Vector Databases (concepts), Feature Engineering

Programming & Frameworks: Object-Oriented Programming, Design Patterns, Clean Code, FastAPI, Flask, Microservices, REST APIs, Testing (Pytest)

AI Frameworks & Tools: LangChain, Hugging Face Transformers, OpenAI API, Prompt Engineering, Fine-tuning, Model Optimization

Leadership & Process: Agile/SAFe, Scrum Leadership, Cross-Functional Collaboration, Stakeholder Management, Technical Mentoring

Languages

English (Fluent) | German (Elementary - A2) | Hindi (Native)

Publications

Investigating Subjective Motor Activity Perception and Gait in Parkinson's Disease

Slim, S., Küderle, A., Moradi, H., **Mittal, M.**, Salin, E., Winkler, J., & Eskofier, B.

IEEE-EMBS International Conference on Biomedical and Health Informatics 2025