

Azeem Aslam

Data Scientist | AI Engineer | Machine Learning | Computer Vision | Generative AI

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ABOUT ME

AI Engineer and Data Scientist with 6+ years of experience designing enterprise AI solutions, Machine Learning models, Computer Vision applications, Predictive Analytics systems, Data Engineering pipelines, Natural Language Processing (NLP) solutions, Large Language Model (LLM) applications, and Decision Support Systems across government, healthcare, manufacturing, and commercial sectors. Proven expertise in transforming large-scale structured and unstructured data into actionable intelligence using Python, SQL, FastAPI, PostgreSQL, ClickHouse, MongoDB, Redis, PyTorch, TensorFlow, and modern AI frameworks. Experienced in developing scalable production AI systems, deploying enterprise-grade APIs, and delivering data-driven solutions that improve operational efficiency and strategic decision-making.

DIGITAL SKILLS

Programming Languages:

Python, SQL

Artificial Intelligence & Data Science:

Machine Learning, Deep Learning, Predictive Analytics, Data Mining, Statistical Analysis, Feature Engineering, Exploratory Data Analysis (EDA), Data Visualization, Model Development, Model Evaluation, Model Optimization

Computer Vision:

Object Detection, Instance Segmentation, Image Classification, Medical Imaging, YOLOv8, YOLOv8-seg, YOLOv9, OpenCV, MediaPipe

Natural Language Processing (NLP) & Generative AI:

Natural Language Processing (NLP), Sentiment Analysis, Text Classification, Language Detection, Multilingual NLP (Urdu/Roman Urdu), RoBERTa, Large Language Models (LLMs), Ollama, Qwen, Llama 3, Hugging Face Transformers, Claude AI

Data Engineering & Databases:

ETL Pipelines, Data Cleaning, Data Transformation, PostgreSQL, MongoDB, ClickHouse, Redis, RabbitMQ

Frameworks & Libraries:

PyTorch, TensorFlow, Scikit-learn, Pandas, NumPy, FastAPI, Streamlit

Cloud, DevOps & Deployment:

Docker, Docker Compose, Amazon Web Services (AWS), Git, Linux, REST APIs, Model Deployment, YAML Configuration Management

Data Collection & Automation:

Playwright, Selenium, Apify Cloud, n8n Cloud, Web Scraping, Workflow Automation

Business Intelligence & Reporting:

Power BI, KPI Development, Dashboard Design, Executive Reporting, Decision Support Systems

Version Control & Collaboration:

Git, GitHub

WORK EXPERIENCE

OdyxAI (USA – Remote)

Senior Computer Vision Engineer | 2025 – Present

- Designed and developed an end-to-end AI-powered vehicle damage assessment platform using YOLOv8-seg for instance segmentation of dents, scratches, peel paint, and broken parts with pixel-level accuracy.
- Developed scalable production-ready REST APIs using FastAPI, implementing asynchronous inference, Singleton model architecture, Pydantic validation, and CORS middleware.
- Built an AI-driven damage severity classification and repair cost estimation engine using configurable YAML-based business rules for dynamic model behaviour.
- Containerized and deployed the complete application using Docker and Docker Compose, improving deployment efficiency and system scalability.
- Automated branded PDF damage assessment report generation using ReportLab, streamlining inspection reporting and customer documentation.
- Collaborated with cross-functional teams throughout the AI product lifecycle, including model development, API integration, deployment, testing, and production support.

Crime Surveillance Unit (CSU, CM House), Government of Punjab

AI & Data Scientist | 2025 – Present

- Designed and developed enterprise AI and advanced analytics solutions supporting data-driven decision-making for Punjab law enforcement agencies.
- Built scalable data engineering pipelines for processing large-scale complaint, FIR, crime, and operational datasets using Python, SQL, PostgreSQL, ClickHouse, and MongoDB.
- Automated ETL workflows, data cleaning, KPI generation, and executive reporting to improve operational efficiency and strategic decision-making.
- Designed scalable AI-powered data architectures integrating PostgreSQL, ClickHouse, MongoDB, Redis, and RabbitMQ for enterprise analytics.
- Developed an AI-powered Social Media Intelligence platform monitoring 211+ verified accounts across Facebook, X, Instagram, TikTok, and YouTube using Playwright, Selenium, and Apify.
- Designed multilingual sentiment analysis pipelines using fine-tuned RoBERTa, Ollama, Qwen, and Llama 3 for Urdu, Roman Urdu, and English text while ensuring on-premises processing of sensitive government data.
- Built automated AI workflows using RabbitMQ and n8n for data ingestion, sentiment analysis, executive insights, anomaly detection, and real-time alert generation.
- Developed executive dashboards, KPI frameworks, and analytical reports supporting leadership in operational monitoring and strategic planning.
- Collaborated with cross-functional teams to deliver enterprise AI solutions, data engineering workflows, and intelligent automation across multiple government departments.

OmniDent.ai (USA – Remote)

Computer Vision Engineer | 2024 – Present

- Designed data augmentation and preprocessing pipelines to improve model robustness under varying lighting, motion, occlusion, and real-world conditions.
- Developed AI-powered pose estimation and gait analysis models using PyTorch, TensorFlow, MediaPipe, and OpenPose for healthcare monitoring applications.
- Validated real-time human pose tracking models and optimized deep learning inference for production-ready healthcare AI applications.
- Collaborated with multidisciplinary teams to develop computer vision solutions for medical and healthcare environments.

UVAS & NAVTTC (Pakistan)

Lecturer & AI Trainer | 2025 – Present

- Delivered hands-on training in Artificial Intelligence, Machine Learning, Computer Vision, Data Structures, and Robotics to 200+ students and professionals.
- Designed practical AI labs, real-world assignments, and industry-oriented learning content.
- Supervised AI projects involving YOLO, FastAPI, Streamlit, Flask, and Machine Learning model development.
- Mentored students in building end-to-end AI applications from data preparation to deployment.

UVAS Department of Theriogenology, Lahore

Computer Vision Engineer | 2024 – 2025

- Developed OvaPredict AI, an end-to-end YOLOv8s-seg solution for automated oocyte maturation prediction using 720 expert-annotated microscopy images.
- Designed and optimized the complete deep learning pipeline, including dataset preparation, model training, evaluation, hyperparameter tuning, and deployment.
- Achieved 67.1% mAP50 and 79.2% recall while developing a clinical web application for real-time image segmentation, morphological analysis, and prediction visualization.
- Collaborated with reproductive biology specialists to develop AI solutions supporting healthcare and biological research.

Punjab Safe Cities Authority (Pakistan)

Communication Officer | 2017 – 2023

- Developed an AI-powered Social Media Intelligence platform monitoring 211+ verified government and law enforcement social media accounts across five digital platforms.
- Contributed to AI-driven video analytics initiatives, including object detection, anomaly detection, and intelligent surveillance applications.

EDUCATION & TRAINING

University of Salford 2023 – 2024

MSc, Internet of Things with Data Science

GPA: Distinction

Achievements: Thesis: A deep learning framework for advanced vehicle/image classification and recognition

Coursework: Big data tools and techniques, Privacy in IoT devices, Machine learning and data mining

University of Sargodha 2012 – 2016

Bachelor of Science, Information Technology

GPA: A

Achievements: Thesis: JobFlow: Optimizing Recruitment with an ATS Solution

Coursework: Calculus and analytic geometry, Object-oriented programming, Database management system, Web systems and technologies, Information retrieval

PROJECTS

AI-Powered Police-Public Sentiment Intelligence Platform:

- Designed and developed an enterprise Social Media Intelligence platform monitoring 211+ verified government and law enforcement social media accounts across Facebook, X, Instagram, TikTok, and YouTube.
- Developed multilingual sentiment analysis using fine-tuned RoBERTa, Ollama (Qwen & Llama 3), automated data pipelines, anomaly detection, executive dashboards, and real-time alert generation.

OvaPredict AI – Oocyte Maturation Prediction (UVAS Collaboration):

- Developed an end-to-end YOLOv8s-seg solution for automated oocyte maturation prediction using 720 expert-annotated microscopy images.
- Achieved 67.1% mAP50 and 79.2% recall while deploying a real-time clinical web application for image segmentation and prediction.

Vehicle Damage Detection & Repair Cost Estimation System:

- Developed an AI-powered vehicle damage assessment platform using YOLOv8-seg, FastAPI, Docker, and ReportLab.
- Implemented automated severity classification, repair cost estimation, REST APIs, and PDF inspection report generation.

Healthcare Pose & Gait Analysis System:

- Developed deep learning-based pose estimation and gait analysis models using PyTorch, TensorFlow, MediaPipe, and OpenPose for healthcare monitoring applications.

Industrial Object Detection System:

- Designed computer vision models for industrial object detection, image segmentation, and automated visual inspection.

Pakistan Crime Analytics Dashboard:

- Developed interactive dashboards and analytical reports for crime trend analysis, KPI monitoring, and operational decision support using Python and SQL.

Clinical Trial Data Analytics:

- Performed large-scale clinical trial data analysis, feature engineering, machine learning, and SQL-based analytics using DataFrames and distributed processing techniques.

Diabetes Predictive Analytics:

- Developed machine learning models and performed exploratory data analysis (EDA) for diabetes prediction and healthcare analytics.

Credit Card Financial Analytics Dashboard:

- Built interactive business intelligence dashboards for financial data visualization, KPI reporting, and trend analysis.

KEY ACHIEVEMENTS

- Designed enterprise AI solutions supporting province-wide law enforcement decision-making.
- Built AI-powered Social Media Intelligence platform monitoring 211+ verified government accounts.
- Developed scalable production AI applications using FastAPI, Docker, PostgreSQL, ClickHouse, RabbitMQ, MongoDB, and Redis.
- Delivered AI solutions across government, healthcare, manufacturing, and commercial sectors.
- Trained 200+ students and professionals in Artificial Intelligence and Computer Vision.

PROFESSIONAL CERTIFICATIONS

Thinking Like an Analyst — [Maven Analytics](#)

Agile Project Management Certifications — [Udemy](#)

Agile Project Management Certification — [HP LIFE](#)

Scrum Master Certification — [Alison](#)

GDPR Compliance: Essential Training — [Linkedin](#)

HIPAA Privacy & Security Training (with Breach Notification) — [HIPAA Training us](#)

Machine Learning with Python: Foundations — [Linkedin](#)

Machine Learning with Python: k-Means Clustering — [Linkedin](#)

GitHub for Data Scientists — [Linkedin](#)

Learning Power BI Desktop — [Linkedin](#)

LANGUAGE SKILLS

- English — C2 (Reading, Writing, Listening), C1 (Speaking)
- Urdu — Native