Ahmed Bilal Bhatti

Ai Engineer & Researcher | Deep Learning | Custom Architectures

Lahore, Pakistan | ahmadbilalssg@gmail.com | +92 3161410149 | Website | GitHub | LinkedIn | Medium

PROFESSIONAL SUMMARY

Al Engineer with a degree in Artificial Intelligence and a specialization in deep learning, bringing over 2+ years of experience in designing and deploying high-impact computer vision solutions. Skilled in architecting end-to-end Al pipelines from data strategy and model research to optimization and deployment achieving measurable improvements in accuracy, speed, and high-performance deployment. Proven ability to develop state-of-the-art models that enhance performance and efficiency in real-world applications. Experienced in production deployment, containerization, and MLOps workflows, with advanced expertise in parallel training infrastructure, hardware acceleration techniques, and parallel computing workflows for enterprise-level Al model training. A passionate, collaborative innovator committed to advancing Al through tangible, scalable results and impactful problem-solving.

WORK EXPERIENCE

Al Engineer KASWA.Al, Lahore, Pakistan

Full-time | Remote
July 2025 - Present

- Designed and implemented end-to-end computer vision pipelines from data preprocessing to deployment, applying advanced optimization techniques including quantization and pruning.
- Optimized medical imaging models using custom deep learning approaches, improving diagnostic accuracy and reducing inference time for clinical applications.
- Engineered Al-powered dashboards and integrated computer vision models with BI reports, enabling data-driven decision-making through visual analytics and business-driven workflows.
- Created and managed AI development and production infrastructure, including platform packaging, system coordination, and automated testing for reliable model deployment into existing systems.
- Lead cross-functional teams and serve as a bridge between technical and business stakeholders to identify key Al impact areas.

Al Engineer | Visual Designer KASWA.Al, Lahore, Pakistan

Part-time | Remote December 2023 – June 2025

- Developed and optimized computer vision solutions, including object counting on production lines, student cheating detection, OCR-based license plate recognition, and site safety monitoring.
- Engineered Al-driven applications, including Call Center and E-commerce chatbots that use graph database—powered Bl reporting, and implemented a full e-commerce platform covering product browsing through secure payments.
- Facilitated in creating multimedia and marketing assets, including corporate videos, exhibition displays, and targeted social media content, to strengthen brand presence.
- Contributed to product development and quality assurance, testing enterprise web portals, participating
 in CRM portal development and enhancements, and collaborating across teams to align deliverables with
 business-driven goals.

Django Developer | Visual Designer KASWA.AI, Lahore, Pakistan

Internship | Remote
June 2023 - November 2023

 Designing and maintaining a comprehensive enterprise management platform using Django, integrating HR, client, and staff operations, including recruitment, task management, attendance tracking, and termination workflows.

- Developing and prototyping web solutions for internal and client projects, ensuring functional validation before deployment, including building a Django-based hospital website to present brain segmentation results clearly to stakeholders.
- Producing branding and marketing assets—corporate videos, exhibition displays, and social media content—to strengthen company visibility and engagement.
- Collaborating with cross-functional teams to align technical deliverables with business-driven objectives, ensuring seamless integration and efficient project execution.

Graphic Designer & Al Trainer SparkEd, Lahore, Pakistan

Contract | On-site

January 2025 - Present

- Executive Member of a youth-focused AI education initiative sponsored by IREX, U.S. Department of State, Global UGRAD Pakistan, and Pakistan-U.S. Alumni Network, fostering partnerships with multiple universities and engaging institutional leaders.
- Designed and led interactive, age-appropriate activities for secondary and higher secondary students, introducing AI, analytical thinking, and critical problem-solving through puzzles, role-based simulations, beginner-friendly coding, Google Teachable Machine, Microsoft Lobe, demos, Scratch and simulations.
- Delivered dynamic workshops combining storytelling, multimedia, and hands-on challenges, enabling participants to build, test, and understand AI models during sessions, both in-person and through recorded coverage.
- Created and maintained the official program website on AWS EC2, ensuring timely updates with event schedules, workshop materials, and resources, while also documenting activities through photos and videos for outreach and training.
- Produced and designed impactful visual content—including social media posts, stories, infographics, and exhibition visuals—to amplify the program's vision, enhance branding, and strengthen recognition locally and internationally.

Research Assistant Full-time | On-site
University of Management and Technology Maker Space, AVR Research Group April 2024 - Present

- Developed end-to-end computer vision pipeline from scratch, handling live data streams and big data processing while implementing GPU optimization techniques including efficient sampling, batching, and multi-GPU utilization.
- Produced state-of-the-art vehicle re-identification model that outperformed top-tier ReID benchmarks through custom loss functions, hyperparameter tuning, and custom model architecture and optimization techniques.
- Engineered and managed large-scale datasets including confidential research data from Global professors, implemented data annotation workflows, and created custom datasets with augmentation techniques.
- Implemented advanced CNN architectures with attention mechanisms, solved complex mathematical problems in CV architecture design, and developed high-inference systems optimized for edge devices with limited resources.
- Showcased Makerspace products and delivered Al-powered products for enterprise clients at Future Fest 2025, Sundar Expo, and other exhibitions, presented and defended research to top Al industry experts, designed graphic materials for technology expositions, and participated in and won Al competitions, demonstrating problem-solving and innovative thinking in challenging environments.
- Mentored juniors through training sessions on re-identification and diverse CV topics including object detection, metric learning, and attention mechanisms.
- Gained expertise in diverse hardware including drones, cameras, sensors, and 3D printing technology while understanding networking protocols and edge and cloud deployment strategies.
- Gained expertise in diverse hardware including drones, cameras, sensors, and 3D printing technology
 while understanding and working with networking protocols, edge and cloud deployment strategies,
 utilized high-performance computing lab resources, implemented dedicated CV architectures, and gained
 hands-on experience with electrical engineering components for hardware integration.

- Utilized 3D mesh point cloud reconstruction for virtual try-on technology, mastered containerization for deployment, and understood in-depth computer architecture implications for CV applications.
- Enhanced professional and research skills under the mentorship of a PhD advisor, developing advanced entrepreneurship knowledge and refining technical communication abilities through high-impact expo presentations to AI industry leaders and research communities.

EDUCATION

Bachelor of Science – BS, Artificial Intelligence

University of Management and Technology – UMT, Lahore, Pakistan

October 2021 – July 2025

Faculty of Science – FSc, Pre - Engineering

KIPS Education System, Lahore, Pakistan

June 2019 - July 2021

Matric with Computer Science KIPS Education System, Lahore, Pakistan

June 2017 - July 2019

TECHNICAL SKILLS

- Python (10k+ LOC)
- PyTorch
- TensorFlow / Keras
- OpenCV / YOLO
- scikit-learn
- NumPy / Pandas
- Matplotlib / Seaborn
- ONNX / TensorRT
- TFLite
- Training, Evaluation and Optimization

- C++/C (10k+ LOC)
- Model Quantization / Pruning
- CUDA / cuDNN
- Custom SOTA Architectures
- CNN / Transformer / GNN
- Metric Learning / Classify
- Detectron2 / MMDetection
- MediaPipe / CVAT
- Docker

- Git
- Linux
- Cloud Computing
- Edge Devices (Jetson, Pi)
- Roboflow
- SQL / NoSQL (Neo4j)
- Framework: Django / Flask / FastAPI / REST
- Data Visualization
- Distributed Training
- Model Parallelism

SOFT SKILLS

- Adobe Photoshop (PS), Premier (PR), Figma
 Illustrator (AI), After Effects (AE), Audition (AU)
- Analytical Thinking & Logical Reasoning
- Creative Problem-Solving & Innovation
- Strategic Planning & Leadership
- Time, Risk and Deadline Management
- Collaboration & Cross-Functional Teamwork

- Microsoft Office Suite (Word, PowerPoint, Excel)
- Adaptability & Continuous Learning
- English & Business Communication
- Technical Writing & Documentation
- Research & Data Interpretation
- Public Speaking & Presentation Skills
- Professional Ethics & Workplace Practice

ADDITIONAL SKILLS

- Implement
- Framework
- Software
- Manufacturing
- Transportation
- Retail
- Defense
- Policy Compliance
- Risk
- Administration

- Equipment
- Training & Mentorship
- Data Privacy & Access Control
- Events
- Record Management
- Publications
- Customer Engagement
- Employees
- Commodities
- Control

LANGUAGES

Introduction to Ai Ethics - verify

Python - verify

English Proficient Urdu Native Punjabi Native **PUBLICATIONS** Vehicle Re-identification (TrackXNet) - Demo Paper Coming Soon Graph and Attention Mechanisms for Visual Feature Learning achieving SOTA beating existing re-ID models. **SPECIALIZATIONS Deep Learning Specialization - verify** DeepLearning.Al Agentic AI and AI Agents for Leaders - verify Vanderbilt University **CERTIFICATIONS** Advanced AI: Transformers for Computer Vision - verify LinkedIn Learning **AWS Cloud Technical Essentials - verify AWS Cloud Technical Essentials** Agentic Al and Al Agents: A Primer for Leaders - verify Vanderbilt University Camera and Imaging - verify Columbia University Computer Vision in Microsoft Azure - verify Microsoft **Determining AI Needs - verify** Fred Hutchinson Cancer Center **Docker Fundamentals - verify** LearnKartS Introduction to Machine Learning on AWS - verify **AWS Cloud Technical Essentials** OpenAl GPTs: Creating Your Own Custom Al Assistants - verify Vanderbilt University People and Soft Skills Assessment - verify **IBM** Prompt Engineering for ChatGPT - verify Vanderbilt University **Neural Networks and Deep Learning - verify** DeepLearning.Al **Structuring Machine Learning Projects - verify** DeepLearning.Al Build Basic Generative Adversarial Networks (GANs) - verify DeepLearning.Al Convolutional Neural Networks - verify DeepLearning.Al Al Infrastructure and Operations Fundamentals - verify **NVIDIA English Immersion - verify** University of Management and Technology – UMT Object Tracking and Motion Detection with Computer Vision - verify **MathWorks** Deep Learning with PyTorch : Siamese Network - verify Coursera Project Network Improving Deep Neural Networks: Hyperparameter Tuning, Regularization and **Optimization - verify** DeepLearning.Al A Tour of Cloud Networking - verify Google Cloud PyTorch Essential Training: Deep Learning - verify LinkedIn Learning Securing Diango Applications - verify LinkedIn Learning Fundamentals of Azure Al Services - verify Microsoft Building RESTful Web APIs with Django - verify LinkedIn Learning Advance SQL - verify Kaggle Data Science Expert with Python Django - verify Simplilearn

Kaggle

Kaggle