

# Ahmed Bilal Bhatti

AI Engineer | AI Researcher | Computer Vision | Generative AI | Bringing Innovation Through AI  
Lahore, Pakistan | [ahmadbilalssg@gmail.com](mailto:ahmadbilalssg@gmail.com) | +92 3161410149 | [Website](#) | [GitHub](#) | [LinkedIn](#) | [Medium](#)

## PROFESSIONAL SUMMARY

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AI Engineer with a degree in Artificial Intelligence and a specialization in deep learning, bringing over 3 years of experience in designing and deploying high impact computer vision, and generative solutions. Skilled in architecting end-to-end AI 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. Experienced in MLOps workflows, with advanced expertise in parallel training infrastructure, hardware acceleration techniques, and parallel computing workflows for enterprise-level AI model training. A passionate, collaborative innovator committed to advancing AI through tangible, scalable results and impactful problem-solving.

## WORK EXPERIENCE

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### AI Engineer

KASWA.AI, Lahore, Pakistan

Full-time | Remote

July 2025 – Present

- Engineered and delivered comprehensive computer vision solutions optimizing workflows from data processing to deployment, cutting time-to-production by 40% while managing end-to-end data lifecycle processing millions of data points monthly.
- Developed AI-powered recommendation systems, generative AI automation solutions, and product application automation, integrating vision models with BI dashboards to translate AI capabilities into actionable insights and increase data-driven decision adoption.
- Optimized medical imaging models using custom deep learning approaches, improving diagnostic accuracy by 35%, processing efficiency by 60%, and reducing inference time by over 50% across production systems.
- Built and maintained AI development and production infrastructure while managing a team of 3+ engineers, deploying scalable frameworks capable of handling high-volume operations and improving operational efficiency by over 30%.
- Created and managed AI development and production infrastructure, including RAG pipelines, platform packaging, system coordination, and testing for reliable model deployment into existing systems.
- Led cross-functional teams and served as a bridge between technical and business stakeholders to identify key AI and RAG-driven impact areas, aligning innovation with organizational goals.

### Junior AI Engineer

KASWA.AI, Lahore, Pakistan

Part-time | Remote

December 2023 – July 2025

- Developed production-grade computer vision applications including object counting systems, student monitoring platforms, OCR license plate recognition, and site safety monitoring, processing thousands of daily transactions with 95%+ accuracy.
- Built sophisticated AI chatbots for call centers and e-commerce platforms leveraging graph database-powered retrieval and BI reporting integration, reducing customer response time by 65% and increasing satisfaction scores by 40%.
- Developed comprehensive end-to-end e-commerce solutions from product browsing to secure payment processing, supporting numbers of annual transactions while maintaining near-perfect uptime and client satisfaction.
- Enhanced enterprise web portals through comprehensive testing and CRM improvements while leading cross-team collaboration across 3+ departments, reducing system bugs by 80% and improving user experience scores by 35%.

## **Django Developer | Visual Designer**

**KASWA.AI, Lahore, Pakistan**

Internship | Remote  
**June 2023 – November 2023**

- Designed and maintained comprehensive Django enterprise management platform integrating HR operations, client management, and staff workflows, serving employees and reducing administrative overhead by 45%.
- Developed complete recruitment and workforce management system with task management, attendance tracking, and termination processes, streamlining HR operations with 80% process efficiency gain across annual hiring cycles.
- Built Django-powered hospital website presenting complex brain segmentation results in accessible formats for medical stakeholders, improving clinician decision-making time by 35% and serving hundreds of healthcare professionals.
- Created strategic brand visibility campaigns through corporate video production, exhibition materials, and social media content, increasing brand engagement by 80% and generating 500K+ quarterly impressions across multiple platforms.

## **Information Technology Intern**

**DHA (Defense Housing Authority Main Office Complex), Lahore, Pakistan**

Full-time | On-site  
**October 2025 – January 2026**

- Developed an AI-powered pipeline to fully automate the Main Office Complex Vehicle entry system, streamlining access management and enhancing security protocols.
- Engineered a digital Gate Pass Management System that automated manual workflows, generating 10+ daily passes and significantly improving tracking, verification, and operational efficiency.
- Built an Inventory Management System with automated tracking, maintaining detailed logs of asset assignments, status updates, and real-time inventory monitoring.
- Learned and assisted technical support and troubleshooting for hardware, software, and network issues, ensuring minimal downtime and optimal system performance.
- Gained hands-on experience in enterprise IT operations, including datacenter management, system administration, and IT infrastructure maintenance.
- Supported data integrity initiatives through systematic documentation, record keeping, and database management practices.

## **AI 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.

## **Research Assistant**

**AI, Vision & Robotics Research Lab (AVR)**

Full-time | On-site  
**April 2024 – September 2025**

- 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 AI-powered products for enterprise clients at Future Fest 2025, Sundar Expo, and other exhibitions, presented and defended research to top AI industry experts, designed graphic materials for technology expositions, and participated in and won AI 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

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### 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

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|------------------------|---|--|
| • Python (10k+ LOC)    | • Training, Evaluation and Optimization | • MediaPipe / CVAT                           |
| • PyTorch              | • C++/C (10k+ LOC)                      | • Docker, Kubernetes                         |
| • TensorFlow / Keras   | • Model Quantization / Pruning          | • Git  |
| • OpenCV / YOLO        | • CUDA / cuDNN                          | • Linux                                      |
| • scikit-learn         | • Custom SOTA Architectures             | • Cloud Computing                            |
| • Milvis               | • RAG System                            | • Edge Devices (Jetson, Pi)                  |
| • NumPy / Pandas       | • Hugging Face                          | • Roboflow                                   |
| • Matplotlib / Seaborn | • CNN / Transformer / GNN               | • Custom Chatbots                            |
| • ONNX / TensorRT      | • Metric Learning / Classify            | • LoRA, QLoRA                                |
| • TFLite               | • n8n                                   | • SQL / NoSQL / Vector DB                    |
| • OpenAI API           | • Detectron2 / MMDetection              | • Framework: Django / Flask / FastAPI / REST |
| • Transformers         | • LangChain                             | • Text Chunking                              |
| • SageMaker, EC2, S3   |   | • OCR  |
| • FAISS                |   | • Lovable                                    |

- Sentence Transformers
- Agents
- Data Visualization
- Distributed Training
- Model Parallelism

## SOFT SKILLS

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- 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

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- Implement
- Framework
- Software
- Troubleshooting
- Retail
- Defense
- Policy Compliance
- Risk
- Administration
- Equipment
- Training & Mentorship
- Record Management
- Access Control
- Data Privacy
- Publications
- Customer Engagement
- Employees
- Control

## LANGUAGES

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English	Proficient
Urdu	Native
Punjabi	Native

## PUBLICATIONS

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**Vehicle Re-identification (TrackXNet) - [Demo](#)** Paper Coming Soon  
**TrackXNet: Lightweight Vehicle Re-Identification via Hybrid Graph Convolutional and Attention Mechanisms.**

## SPECIALIZATIONS

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- **Deep Learning Specialization - [verify](#)** DeepLearning.AI
- **Agentic AI and AI Agents for Leaders - [verify](#)** Vanderbilt University

## CERTIFICATIONS

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- **Building Generative AI Skills for Developers - [verify](#)** LinkedIn Learning
- **GenAIOps Foundations - [verify](#)** LinkedIn Learning
- **Advanced RAG Applications with Vector Databases - [verify](#)** LinkedIn Learning
- **Generative AI vs. Traditional AI - [verify](#)** LinkedIn Learning
- **Generative AI: Working with Large Language Models - [verify](#)** LinkedIn Learning
- **Introduction to Large Language Models - [verify](#)** LinkedIn Learning
- **LLM Foundations: Vector Databases for Caching and Retrieval Augmented Generation (RAG) - [verify](#)** LinkedIn Learning
- **Cloud Architecture: Core Concepts - [verify](#)** LinkedIn Learning
- **Advanced AI: Transformers for Computer Vision - [verify](#)** LinkedIn Learning
- **AWS Cloud Technical Essentials - [verify](#)** AWS Cloud Technical Essentials
- **Agentic AI and AI 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
- **OpenAI GPTs: Creating Your Own Custom AI 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.AI
- **Structuring Machine Learning Projects** - [verify](#) DeepLearning.AI
- **Build Basic Generative Adversarial Networks (GANs)** - [verify](#) DeepLearning.AI
- **Convolutional Neural Networks** - [verify](#) DeepLearning.AI
- **AI 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.AI
- **A Tour of Cloud Networking** - [verify](#) Google Cloud
- **PyTorch Essential Training: Deep Learning** - [verify](#) LinkedIn Learning
- **Securing Django Applications** - [verify](#) LinkedIn Learning
- **Fundamentals of Azure AI Services** - [verify](#) Microsoft
- **Building RESTful Web APIs with Django** - [verify](#) LinkedIn Learning
- **Advance SQL** - [verify](#) Kaggle
- **Data Science Expert with Python Django** - [verify](#) Simplilearn
- **Introduction to Ai Ethics** - [verify](#) Kaggle
- **Python** - [verify](#) Kaggle