# Ali Habibullah

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## Technical Skills

**Strategic Skills**: Executive Reporting, Analytics Automation, KPI Development, Technical Training, Data-Driven Decision Support, Performance Optimization

**AI & Analytics**: Predictive Modeling, Machine Learning, Deep Learning, Statistical Analysis, Data Visualization, ETL Pipeline Development, Cloud Computing (Azure)

**Technologies & Tools**: Python, SQL, C#, Pandas, NumPy, PyTorch, Scikit-learn, Matplotlib, Power BI, Azure, Git, Laravel, Django, Angular

## Professional Experience

**Research Engineer** June 2024 – Present

*King Abdullah University of Science and Technology (KAUST)*

- Supervised over 100 students during an intensive summer training program in Computer Vision (CV), Generative AI, Reinforcement Learning (RL), and Natural Language Processing (NLP). This condensed program is equivalent to two full academic semesters
- Teaching Assistant for the "Deep Generative Modeling" Master's course, where I supported instruction on advanced unsupervised learning topics, including diffusion models, StyleGANs, and recent breakthroughs in generative modeling
- Teaching Assistant for the "Natural Language Processing Applications" Master's course, helping guide students from the foundations such as LSTMs and GRUs to advanced topics like Large Language Models (LLMs) and their applications, including Retrieval-Augmented Generation (RAG) for multilingual government use cases
- Supervised "Master's Directed Research" projects, mentoring students as they completed their capstone projects across sectors such as public safety, Hajj crowd management, and smart city initiatives. Several of these projects are deployed on country wide level
- Managed the four stage KAUST Academy AI Specialization Program - 2025 batch, which received over 15,000 application. After a highly selective filtering process, the top 120 students were chosen for global summer internships, which I oversaw at various institutions worldwide
- Led diverse AI research projects, including:
  - Hurricane path prediction using real world data with students from the University of The Bahamas
  - Fine-tuning LLMs to generate Arabic narratives in different Saudi dialects, in collaboration with Ministry of Interior (MOI) students
  - Developing a hybrid image generation model by using a VAE decoder as the generator component of a GAN, as a research initiative with MOI students

**Software Developer** June 2023 - June 2024

*Lyrae Digital*

- Was involved in the product management of GA_Universe, a local low-code/no-code platform, by writing new features and enhancing existing ones
- Oversaw the JIRA ticketing system, writing over 700 tickets to streamline feature implementation and enhancements, increasing process efficiency by 35%
- Involved in Quality Assurance for most submitted tickets, enhancing project reliability and adherence to standards
- Developed onboarding materials and designed the launch website using HTML, CSS, and PHP
- Managed the documentation website as an open-source project on GitHub using Docusaurus
- Led a subsidiary project focusing on an e-commerce platform designed for wholesale transactions

**Teaching Assistant**

*King Abdullah University of Science and Technology (KAUST)* *January 2024 - March 2024*

- Served as a Head Teaching Assistant for the Artificial Intelligence track, focusing on stages two and three
- Assisted in teaching over 500 students the fundamentals of machine learning and deep learning using PyTorch

• Worked across three different universities: University of Jeddah (UJ), King Abdulaziz University (KAU), and King Abdullah University of Science and Technology (KAUST)

**Intern**
*KAU HPC Center* *June 2022 - October 2022*

• Resolved critical issues in the admin dashboard and other sections
• Developed user interfaces and backend logic with Laravel, HTML, Tailwind CSS, and React JS for various functionalities
• Led the AZIZ account request feature development, integrating email alerts, attachment processing, and tracking request history
• Selected for a leadership role as an intern due to outstanding performance
• Managed and mentored a team of 8 interns, overseeing project tasks
• Maintained version control of the website on GitHub, enhancing team workflow and collaboration

## EDUCATION

**King Abdulaziz University** February 2019 - February 2023
*B.Sc. in Computer Science, GPA: 4.98/5*

**King Abdullah University of Science and Technology (KAUST)** 2023
*Artificial intelligence Summer School*

• Selected from over 10,000 applicants for fully-sponsored intensive program focused on Natural Language processing, Computer Vision and Reinforcement learning.

## ACHIEVEMENTS & CREDENTIALS

**Professional Certifications**

• Meta Back-End Developer
• Machine Learning Specialization
• Deep Learning
• IBM Data Science Professional Certificate – 5/10 Courses Completed
• Advanced Artificial Intelligence: Computer Vision
• Introduction to Artificial Intelligence

## PROJECTS

**KAUST Academy – AI Specialization**

• Contributed to the design and delivery of an intensive 8-week AI specialization program at KAUST, covering foundational and advanced topics across Computer Vision, Generative AI, Reinforcement Learning, and Natural Language Processing
• Co-developed detailed theory slides for lectures on Diffusion Models, Transformers, Vision Transformers (ViT), Contrastive Learning, Reinforcement Learning (DQN, PPO, SAC), and Large Language Models (LLMs)
• Designed and implemented hands-on lab materials accompanying the lectures, enabling students to build and experiment with real-world AI architectures

**EN-AR Translator**

• Developed an English to Arabic translator using the Transformer architecture, integrated into a Django web application
• Conducted a two-phase training process utilizing the CCMatrix dataset to optimize translation performance
• Wrote a Jupyter notebook for training translation models and built an interactive translation platform for real-time use

**NLP Project – Sentiment Analysis**

• Developed a CNN model using TensorFlow for immediate sentiment analysis feedback, complete with a GUI
• Trained the model on Kaggle's Sentiment140 dataset, achieving an accuracy of 93.79%
• Enhanced the architecture to capture bi-grams to quad-grams, incorporating dense layers and dropout for effective regularization