



## Zohaib Arshid

**Role: Sr. AI Engineer Contact:**  
**info@soc-solution.com Pricing**  
**per month: \$3000**  
**Pricing per hour: \$25**



**Botmer**  
international

### WORK EXPERIENCE

**Machine Learning Engineer SOC Solutions LLC** [ 20/09/2023 – Current ]

**City:** Islamabad - Remote | **Country:** Pakistan Developed a Smart Media Monitoring System featuring facial recognition, advanced data retrieval with RAG using LLama and ChromaDB, and a conversational chatbot via NVIDIA Inference Microservice. Enhanced SQL query generation with Microsoft's Phi-2 model, implemented speech-to-text and logo detection, and integrated scene detection, OCR, and multi-language summary generation. Further optimized content retrieval and ranking by implementing DDPG (Deep Deterministic Policy Gradient), using engagement metrics and user feedback as rewards to enhance RAG performance with LLama. **Artificial Intelligence Engineer 2B Vision** [ 01/04/2023 – 19/09/2023 ]

**City:** Lahore | **Country:** Pakistan I was primarily engaged in diverse technical projects involving advanced technologies such as chatbots, natural language processing (NLP), and computer vision. This included developing task-specific chatbots utilizing tools like OpenAI and Hugging Face frameworks, implementing LLMs (Large Language Models) like Vicuna and ChatGPT, and designing medication recommendation systems. Additionally, I contributed to projects focused on automating MS Word editing tasks using ChatGPT API and LLMs. I also led an initiative to implement Advanced Retrieval Augmented Generation (RAG) on custom data using LLama2, Langchain, VectorDB, and NVIDIA Inference Microservice (NIM) for conversational chatbot applications.

### Machine Learning Engineer

**Neurog** [ 01/04/2022 – 03/03/2023 ]

**City:** Islamabad | **Country:** Pakistan I was primarily engaged in diverse technical tasks, including OpenSea API data scraping, data analysis, and map generation using ETL processes and MongoDB. Additionally, I conducted Twitter and website data scraping to gather specific datasets. I contributed to image embedding tasks using models like ResNet50, DenseNet, EfficientNetB5, and VGG19. I also played a key role in website automation with Selenium and FastAPI. Furthermore, I developed a hybrid LSTM-Attention model in stock price prediction, integrating five years of historical data, technical indicators, and sentiment analysis. This included a real-time inference pipeline for automated trading signals and risk management.

### Junior Computer Vision Engineer

**Aeyron Technologies** [ 01/12/2019 – 31/03/2022 ]

**City:** Islamabad | **Country:** Pakistan

I specialized in a range of computer vision projects focused on anomaly detection and recognition tasks. This included developing models for human body pose estimation using technologies like Movenet and MediaPipe, along with leveraging CNN architectures such as EfficientNet and DenseNet. I also led projects in gesture, fight, and weapon detection, utilizing techniques like video scraping and Yolov5 for object recognition. Additionally, I contributed to projects involving cars' number plate recognition using Yolov5 and easyOCR, as well as water pipe leakage detection using similar technologies. Another key area of responsibility was in grocery product information detection and extraction, where I employed OCR, Yolov5, Regex, NLP, and integrated hardware such as Raspberry Pi and Canon cameras for data capture and analysis.

### Research Assistant

**Comsats University Islamabad** [ 01/01/2018 – 31/01/2020 ]

**City:** Abbottabad | **Country:** Pakistan I led various tasks related to advanced data augmentation techniques, including Word Embedding and BackTranslation, to enhance dataset diversity and improve model generalization. I actively engaged in parameter tuning to optimize model performance and efficiency. Additionally, I implemented cutting-edge semi-supervised learning strategies such as Active Learning and Self-training to leverage unlabeled data effectively. My responsibilities also involved applying Transfer Learning

methodologies using models like BERT and RoBERTa to accelerate model training and achieve state-of-the-art results in Natural Language Processing tasks.

## EDUCATION AND TRAINING

**Master in Computer Science Comsats islamabad, abbottabad campus** [ 15/09/2019 – 15/09/2021 ]

City: Abbottabad | Country: Pakistan | Website: <https://www.cuiatd.edu.pk/>

## Bachlore in Software Engineering

**Comsats islamabad, abbottabad campus** [ 07/09/2015 – 15/09/2019 ]

City: Abbottabad | Country: Pakistan | Website: <https://www.cuiatd.edu.pk/>

## PROJECTS

**RAG ON CUSTOM DATASET** Implemented Advanced Retrieval Augmented Generation (RAG) model on custom data leveraging LLama2, vectorDB, and llama index for enhanced information retrieval and generation capabilities.

## GROCERY PRODUCT INFORMATION DETECTION SYSTEM

Implemented an end-to-end solution for capturing and analyzing product labels in real time, enabling accurate recognition of key information. Improved inventory management and customer experience through automated data extraction and processing

## DAILOG AGENT

Developed a task-specific chatbot utilizing audio preprocessing, audio clustering, speech-to-text conversion, text preprocessing, semantic analysis using NLTK, natural language generation, and text-to-speech capabilities. Leveraged cutting-edge technologies such as OpenAI's GPT-3 and Hugging Face's Whisper for enhanced performance.

## DIGITAL SKILLS

Python/ NLP(LLM, NER, POS, Transformer, Chatbots, AI Assistant, NLU, NLG)/ Data Science | Data Collection, Data Processing, Data Analysis, Data Visualisation/ Machine Learning, Deep Learning/ Databases: SQL, MonoDB/ Microprocessor(Audino, Rasberry Pi)

## LANGUAGE SKILLS

**Mother tongue(s):** Urdu **Other language(s):**

**English**

**LISTENING B2 READING B2 WRITING B2**

**SPOKEN PRODUCTION B2 SPOKEN INTERACTION B2**

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

## PUBLICATIONS

[2024] **Using Active and Self-Training to Improve Sentiment Prediction on App Reviews**

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