

Tayyab Bin Tahir

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EDUCATION

National University of Computer and Emerging Sciences - BS Computer Science *Aug 2014-Dec 2018*

- **CGPA 3.20/4.00**
- **Dean's Honor List:** 4th Semester & Final Semester.
- **GPA 3.87/4.00** in relevant courses.

Relevant Courses: Artificial Intelligence | Data Science | Machine Learning | Information Retrieval | Cloud Computing | Advanced Programming | Discrete Structures | Linear Algebra | Numerical Methods | Calculus (I&II)

Research Interests: NLP, Artificial Intelligence, Data Mining, Deep Learning & Parallel Computing.

INDUSTRIAL RESEARCH EXPERIENCE

Algo Inc. *Jul 2020- present*

Position: Research Data Scientist *algo.com*

Algo is an artificial intelligence company that aims to optimize complex supply chain systems and retailer industry using NLP, information retrieval and machine learning.

Tools: Python, C++, SQL, NLTK, OpenNMT, Huggingface, Scikit-learn, Spark, TensorFlow, Microsoft Azure.

- **NLP & Data Science Group** – Working mainly on 2 research projects:
 - **Text to SQL Translation:** The main objective was to enhance the user experience within Algo chatbot by incorporating natural language to SQL generator using state-of-the-art language models such as NL2SQL-BERT & Seq2SQL and achieved 84% accuracy. Currently, testing it for multiple retailers of **Microsoft** such as **Best Buy**.
 - **Context in Group Chat:** To achieve considerable accuracy on long contextual conversations within group chat, I worked on multiple methodologies in NLP and deep learning including multi-intent dialogs, hierarchical attention, named entity recognition and contextual word embedding.

Afiniti Inc. (A McKinsey & Company solution) *Jan 2019- Jul 2020*

Position: Data Scientist – AI Research Group *afiniti.com*

Afiniti is a multi-national unicorn company that aims to intelligently route customers to the best matching representative using big data and AI. 2017 valuation: \$1.6 billion

Tools: Python, R, Julia, C++, SQL, Stan, Hadoop, Spark, Kafka, Scikit-learn, TensorFlow, PyTorch, StatsModels.

- **AI research department** – Worked mainly on 2 research projects:
 - **Context-aware Anomaly Detection:** The main objective was to enhance the real time predictions of recommender system by detecting and eliminating the effect of contextual and behavioral anomalies. Novel method was developed using machine learning and big data analytics and achieved 8% overall performance increase.
 - **Clustering:** To improve the existing clusters for customer-calling groups, domain-aware representations were learnt on the data set of **AT&T US and T-Mobile**. To achieve the generalization in the approach, few shot learning techniques were used for other similar clients.
- **Account Lead** – Specialized models for increasing profitability of clients: **AT&T, Santander Bank, Wyndham**
Monthly Invoice: USD 3.5 million – using Machine Learning simulations and Bayesian statistics
- **Production** – Debugged and enhanced AI system architecture to provide low-latency real-time predictions of customer interactions.

ACADEMIC RESEARCH EXPERIENCE

Research Assistant – Machine learning and Data Mining Lab *May 2017 – Dec 2018*

“Sales bot agent & negotiator” – Final year research thesis under **Dr. Irfan Younas & Dr. Mubasher Baig**

- This project aimed to solve the problem of contextual understanding in the chat bot conversation to carry out near-human negotiations. The main intent was to solve the complexity of contextual negotiations on e-commerce and freelancing websites. It was achieved using Bayesian machine learning, NLP and reinforcement learning techniques including Seq2Seq, BERT models.
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Computer Vision and Graphics Lab (CVGL) LUMS

Jan 2018 – Jan 2019

Position: Undergraduate Research Assistant under Dr. Murtaza Taj

“Road Scene Classification for Self-driving Cars using Spatio-temporal techniques” [Research Draft](#)

- Incorporating the context of road scenes of both developing and developed countries in a classification model for self-driving cars was the major goal of this research.
- Collected the Road scenes data comprising markets, bridges, highways, and intersections
- Spatial classification using transfer learning approaches (Inception-ResNet-v2 and ResNet-50 models)
- Handled noise and scene transitions using Spatio-temporal techniques, resulting in accuracies up to 91%

LEADERSHIP EXPERIENCE

Founder & President of Lahore.AI Community

Aug 2018 – present

- Leading the community of 2000+ AI practitioners to solve the AI research challenges, promote AI education by teaching for free to anyone, organizing meet-ups and events and bridge the gap between industry and academia.
- Collaborations with **IBM, NUCES, LUMS and Google**.
- Useful links: [Lahore AI Community](#) | [Events](#)

Founder Corona Aid Pakistan Foundation (CAP)

March 2020 - present

- Helping the healthcare workers, hospitals and daily wagers in multiple cities by providing rations, sanitizers and masks. Leading a team of 40+ trustworthy volunteers. Raised 8+ Lac rupees and helped 400+ families till now. [Facebook Existence](#)

TEACHING EXPERIENCE

- Teaching Assistant of **Data Science** (CS481) - Assistant Professor **Dr. Irfan Younas**.
- Teaching Assistant of **Artificial Intelligence** (CS401) - **Professor Dr. Kashif Zafar** (Former **HoD** CS Dept).
- As **Machine learning Instructor** of AI Community, I conduct hands-on workshops on Machine learning, Data Science Research and Applied AI.
- Responsibilities: Conducting tutorials | Office hours | Designing and marking quizzes, assignments and projects.

ACADEMIC PROJECTS

Intelligent Gender Recognition System (Computer Vision, Data Science) | **Replica of Google Search Engine** (Information & Text Retrieval Project) | **Sign Language Detection** (Python, OpenCV) | **Data Warehousing & Data Mining for Car Industry** (ETL SSIS, SSRS, SSAS, Power BI) | **Travel Journal** (Heroku, AWS, Python Django)

ONLINE COURSES & CERTIFICATIONS

Online Courses

- **NLP with Deep Learning** (Stanford CS224N | Christopher Manning)
- **Reinforcement Learning** (DeepMind & UCL | David Silver)
- **Machine Learning & Deep Learning** Specializations (Stanford | Andrew Ng)
- **Computer Vision** (UCF | Mubarak Shah)

IBM Certified

- **Big Data (Hadoop Ecosystem)** | **Docker Essentials: A Developer Introduction** | Deep Learning with **TensorFlow**

HONORS AND AWARDS

- PKR 50,000 Summer **Research Grant** from CIVIC NUCES | PKR 1.5 Million Scholarship from NUCES
- **1st Position** in Innovative Project Competition PRA. Awarded **Cash Prize** of worth PKR 20,000.
- **Gold Medalist and Distinction** in Matric with in Lahore Board | Board Merit-based **Scholarship Holder**
- **Brain of Lahore (Mathematics)** among top 308 schools 2012 PKR 50,000 Cash Prize
- **President** - Association for Computing Machinery (**ACM**) FAST National University.

OTHERS

- **Proficient** in Java, C++, SQL, Python, R, Keras, Scikit-Learn, TensorFlow, PyTorch, Pandas, NLTK, OpenNMT, Huggingface, Microsoft Azure, OpenCV2, Hadoop, Spark, Kafka, SPSS, Django.
- **Hobbies:** Basketball, Football, Running.