

# TILA MUHAMMAD

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## RESEARCH INTERESTS

Machine Learning, Natural Language Processing, Sentiment Analysis, Fake News Detection, Hate Speech Detection

## EDUCATION

**FAST – National University of Computer and Emerging Sciences (FAST-NUCES), Islamabad**

MS in Artificial Intelligence

2025 – Present

**Islamia College Peshawar**

BS in Software Engineering – CGPA 3.52/4.0

[View Certificate](#)

2021

## WORK EXPERIENCE

**Cloudditecture** – AI/ML Intern

[View Certificate](#) Nov 2024 – Feb 2025

- Developed and implemented machine learning models for:
  - Sentiment analysis of textual data on yelp reviews and twitter data
  - Email spam classification using natural language processing techniques
  - Quora duplicate question detection using Sentence Transformer and KNN
  - Job description to ESCO occupation code classification

**atomcamp** – Artificial Intelligence Trainee

[View Certificate](#) Jun 2024 – Sep 2024

- Gained hands-on experience through diverse AI and ML projects, including:
  - News classification using the BBC dataset
  - Student adaptability prediction using behavioral data
  - Weather condition identification through image data
  - Summarization of Urdu discussion threads using LSTM and K-Mean Clustering
  - Obesity trend analysis and prediction

**atomcamp** – Data Science Trainee

[View Certificate](#) Jan 2024 – Apr 2024

- Collaborated with peers to gather, clean, and preprocess datasets for exploratory and statistical analysis.
- Utilized Excel for advanced data manipulation, visualization, and statistical computations.
- Wrote SQL queries to retrieve, manipulate, and analyze data from relational databases.
- Designed and developed interactive dashboards and reports using Power BI to communicate insights effectively.

**Strings Technologies** – Odoo Developer Intern

[View Certificate](#) Mar 2022 – Sep 2022

- Worked closely with the CEO to develop and customize Odoo ERP applications based on specific business requirements.
- Diagnosed and resolved technical issues within the Odoo framework, ensuring optimal system performance.
- Maintained comprehensive documentation for custom modules, bug fixes, and technical procedures.

## PROJECTS & RESEARCH EXPERIENCE

**IoT-Enabled Food Freshness Detection Using Multi-Sensor Data Fusion and Mobile Sensing Interface**

*ICCK Transactions on Sensing, Communication, and Control,*

June 2025

- Co-authored with Mazhar Iqbal, Junaid Yousaf, and Atif Khan
- Developed a low-cost IoT-based system using biosensors and a mobile interface to detect food freshness in real time.
- Achieved accurate classification of spoiled vs. consumable dairy, meat, and fruit products using pH, moisture, and ethanol sensors.
- Aimed at reducing foodborne illnesses and minimizing food waste through early spoilage detection.
- DOI: [10.62762/TSCC.2025.401245](https://doi.org/10.62762/TSCC.2025.401245)

**Hate Speech Detection Using Machine Learning and N-Gram Techniques** – [Dr. Atif Khan](#)

March 2023

- Co-authored a research paper focused on detecting hate speech in social media content using supervised machine learning algorithms.
- Tools & Libraries:** Python, NumPy, Pandas, NLTK, Scikit-learn, Matplotlib, Regex.
- Outcomes and Findings:** Achieved 94.58% accuracy, demonstrating high performance in binary classification.
- Conducted data cleaning, feature extraction, model training, and evaluation using metrics like confusion matrix, accuracy, precision, recall, and F1-score.
- DOI: [10.35957/jatisi.v10i1.4711](https://doi.org/10.35957/jatisi.v10i1.4711)

**Exam Management System** – [Dr. Bahar Ali](#)

2022

- Designed and implemented a complete Exam Management System using Odoo ERP platform.
- Automated key academic functions including exam scheduling, grading workflows, and report generation.
- Tools & Technologies:** Odoo ERP, Python, PostgreSQL, CSS, HTML, XML.

- Improved operational efficiency by centralizing exam-related processes within an integrated system.

## **Fake News Detection Using Machine Learning and LSTM – [Dr. Atif Khan](#)**

Oct 2020 – Aug 2021

- Built and compared models for fake news detection using both traditional ML (Logistic Regression + TF-IDF) and deep learning (LSTM + Word2Vec).
- Tools & Libraries:** Python, Tensorflow and Keras, NumPy, Pandas, NLTK, Scikit-learn, Matplotlib.
- Outcomes and Findings:** Accomplished 90.9% accuracy with Logistic Regression (TF-IDF Uni +Tri-grams) and 87.2% with LSTM using Word2Vec embeddings.

## **LEADERSHIP & SERVICE**

### **IEEE Computer Society – FAST-NUCES student Chapter, Research Team Member**

2025 – Present

- Selected to the Research Team; collaborate on chapter-led research initiatives and tooling.
- Contribute literature reviews, prototype code, and internal write-ups; coordinate with peers.

## **CERTIFICATIONS**

1 <sup>st</sup> International Seminar on Advanced Bioinformatics	<a href="#">View Certificate</a>	2025
IELTS   Listening: 7.0, Reading: 5.0, Writing: 6.0, Speaking: 6.0   Overall: 6.0	<a href="#">View Certificate</a>	2025
How to Write and Publish a Scientific Paper, Coursera	<a href="#">View Certificate</a>	2023
Machine Learning, Simplilearn	<a href="#">View Certificate</a>	2023
KP Digital Internship Program	<a href="#">View Certificate</a>	2022
Zero to Mastery Machine Learning, Udemy		2020

## **HONORS & AWARDS**

PM Youth Laptop Scheme – Awarded for Academic Excellence under a Nationwide Merit-Based Initiative	2019
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## **SKILLS**

- Languages:** Python (NumPy, Pandas, Scipy, TextBlob, Matplotlib, Scikit-learn, NLTK, Tensorflow), HTML, CSS, XML, SQL, and Odoo ERP
- Visualization:** Power BI
- Miscellaneous:** Ubuntu, Windows, Latex (Overleaf), Microsoft Office, Visual Studio, Kaggle, Jupyter Notebook, Github, Anaconda

## **REFERENCES**

### **[Dr. Atif Khan](#)**

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### **[Dr. Khalid Haseeb](#)**

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