

# USMAN AMJAD

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Date of Birth: 25 January 1987

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## **CAREER OBJECTIVE**

To pursue excellence in the domains of Artificial Intelligence and Machine Learning, making significant contributions to the advancement of academia and research in these fields. By actively working towards the betterment of society, I aim to utilize my skills and knowledge to drive meaningful impact and foster innovation in AI and ML.

## **ACADEMIC INFORMATION**

## **BRIEF DECSRIPTION**

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|--------------------------------|--|
| 1) MS / PhD (Computer Science) | * Completed PhD. Computer Science in 2018 from <b>University of Karachi</b> ,<br>Thesis Title: <u>Nature Inspired Computing Techniques in Economic and Financial Modeling.</u> |
| 2) BS (Computer Science)       | * Completed BS Computer Science from <b>University of Karachi</b> in year 2008 with First Division.  |
| 3) Intermediate                | * Completed FSc Pre-Engineering from <b>Army Public College Malir Cantt, Karachi</b> in the year 2004 with First Division.   |
| 4) Matriculation               | * Completed Matriculation from <b>PAF Inter College Malir Cantt, Karachi</b> in the year 2002 with First Division.   |

## **RESEARCH INTERESTS**

- Exploring various applications of Machine Learning Algorithms and applying Deep Learning for producing useful results in different domains especially in finance and health sciences datasets.
- Using Deep Learning for computer vision especially in domains of medical image analysis.

## **SCHOLARSHIPS / AWARDS**

- HEC Indigenous PhD Fellowship Phase 2, Batch 2, 2013
- Young Scientist Study Tour 2018 (Scotland) organized by British Council and Higher Education Commission Pakistan (25 March – 01 April)

## **JOURNAL PUBLICATIONS**

- Raza A., Amjad U., Abubakr M, Abbasi A, Azam H., Ali A, “Multiclass Light Weight Brain Tumor Classification and Detection Using Machine Learning Model Yolo 5.” UMT Artificial Intelligence Review, Issue 2, Volume 2 (2022). **(HEC Recognized Y Category)**
- Hani U, Khan K, **Amjad U**, Zaman Jhanjhi N, Latif A, Zia S. 2022. A benchmarking program to support software process improvement adaptation in a developing country, a Pakistan case. PeerJ Computer Science 8:e936 <https://doi.org/10.7717/peerj-cs.936> **IF=1.39**
- Hassan, S., Khanesar, M. A., Hussein, N. K., Belhaouari, S. B., **Amjad, U.**, & Mashwani, W. K. (n.d.). Optimization of Interval Type-2 Fuzzy Logic system using Grasshopper Optimization Algorithm for Electricity Load and Price Forecasting. Computers, Materials & Continua, 71(2), Article in Press, **IF=3.772**
- Humera Tariq, Humera Bashir, **Usman Amjad**: INVERSE COORDINATE TRANSFORMATION AND QUOTIDIAN USE CASES. International Journal of Scientific & Technology Research **(HEC Recognized Y Category)**
- Abdul Muqet, Humera Tariq, **Usman Amjad**, Asia Samreen: Analysis Of Hazy Images Based On K-Means Ground Truth And Quick Shift Segmentation. International Journal of Scientific & Technology Research 05/2019; 8(4):199. **(HEC Recognized Y Category)**
- S.M.Aqil Burney, Tahseen Ahmed Jilani, Humera Tariq, **Usman Amjad**, Syed Shah Muhammad: A Portfolio Optimization Algorithm Using Fuzzy Granularity Based Clustering. BRAIN – Broad Research in Artificial Intelligence and Neuroscience Volume 10, Issue 2 (April, 2019), ISSN 2067-3957 **(HEC Recognized Y Category)**
- Humera Tariq, Syed Faraz Naqvi, Asia Samreen, **Usman Amjad**: GEOMETRIC ANALYSIS OF TIBIOFEMORAL KNEE JOINT: TOWARDS COMPUTER AIDED TREATMENT (CAT) PLANNING. DOI:10.14456/ITJEMAST.2019.41 **(HEC Recognized Y Category)**
- Humera Tariq, Asia Samreen, **Usman Amjad**: HAZE REMOVAL USING IMPROVED AUTOMATIC QUICK SHIFT SEGMENTATION. DOI:10.17654/DM020020295 **(HEC Recognized Y Category)**
- Saad Sheikh, Mohsin Ali, **Usman Amjad**, Ahsan Ali, Humera Tariq: Domain Specific Content Based Image Retrieval (CBIR) for Feminine Textile Designs. IJCSNS International Journal of Computer Science and Network Security, VOL.19 No.2, February 2019 **(HEC Recognized Y Category)**
- Humera Tariq, Tahseen Jilani, **Usman Amjad**, S M Aqil Burney: Novel Seed Selection and Conceptual Region Growing Framework for Medical Image Segmentation. BRAIN – Broad Research in Artificial Intelligence and

- Ayesha Shafiq, Fareed Alvi, Humera Tariq, **Usman Amjad**: Voice Recognition System Design Aspects for Robotic Car Control. IJCSNS International Journal of Computer Science and Network Security, VOL.19 No.1, January 2019 (HEC Recognized Y Category)
- Humera Tariq, Tahseen Jilani, **Usman Amjad**, Ebad Ali, Syed Faraz Naqvi: Recurrence Relation for Projectile Simulation Project and Game based Learning. International Journal of Advanced Computer Science and Applications 12/2018; 9(12):70., DOI:10.14569/IJACSA.2018.091270 (HEC Recognized Y Category)
- **Usman Amjad**, Tahseen Ahmed, Humera Tariq, Amir Hussain: A Quantum based Evolutionary Algorithm for Stock Index and Bitcoin Price Forecasting. International Journal of Advanced Computer Science and Applications 01/2018; 9(9)., DOI:10.14569/IJACSA.2018.090917 (HEC Recognized Y Category)
- **Usman Amjad**, Tahseen A. Jilani, Farah Yasmeen: A Two Phase Algorithm for Fuzzy Time Series Forecasting using Genetic Algorithm and Particle Swarm Optimization Techniques. International Journal of Computer Applications 10/2012; 55(16):34-40., DOI:10.5120/8842-3129 (HEC Recognized Y Category)
- S. M. Aqil Burney, Nadeem Mahmood, Kashif Rizwan, **Usman Amjad**: A Generic Approach for Team Selection in Multiplayer Games using Genetic Algorithm. International Journal of Computer Applications 02/2012; 40(17):11-17., DOI:10.5120/5071-7440
- Jilani T. A., Burney S. M. A, **U. Amjad**, Tanveer A. Siddiqui: A Particle Swarm Intelligence Based Fuzzy Time Series Forecasting Model. International Journal of Computer Applications 01/2012; 38(10):47-52., DOI:10.5120/4742-6776

### **CONFERENCE PUBLICATIONS**

- Tahseen Jilani, **Usman Amjad** and Nikos Mastorakis, “A Hybrid Genetic Algorithm and Particle Swarm Optimization based Fuzzy Times Series Model for TAIFEX and KSE-100 Forecasting”, *BICA'12 Proceedings of the 5th WSEAS congress on Applied Computing conference, and Proceedings of the 1st international conference on Biologically Inspired Computation, University of Algarve, Faro, Portugal, May 2-4, 2012*, pp. 212 – 218
- Tahseen Jilani, **Usman Amjad**, Jafreezal Jaafar and Saima Hassan, “An Improved Heuristic-Based Fuzzy Time Series Forecasting Model Using Genetic Algorithm”, *International Conference on Computer and Information Sciences*, Universiti Teknologi PETRONAS, Malaysia, June 2012

## **TEACHING EXPERIENCE**

- 1) **Assistant Professor CSIT Department, NED University, Karachi (July 2022 – Till Date)**  
Teaching undergraduate and postgraduate level courses of computer science.
- 2) **Assistant Professor COCIS, PAF KIET, Karachi (September 2021 – July 2022)**  
Teaching and Research in Computer Science.
- 3) **Assistant Professor Department of Computer Science, Sir Syed University of Engineering and Technology (November 2019 April 2021)**  
Teaching undergraduate and postgraduate level courses of computer science.
- 4) **Visiting Teacher Department of Computer Science, University of Karachi (January 2018 – November 2018)**  
Teaching different courses at BS level including Artificial Intelligence, Machine Learning, Data Structures, Discrete Mathematics and Internet Programming Techniques.
- 5) **Teaching Assistant, Department of Computer Science, University of Karachi (January 2016 – December 2017)**  
Teaching undergraduate level courses and conducting labs of different subjects including Programming Languages, Data Structures, Discrete Mathematics, Operations Research and Artificial Intelligence
- 6) **Cooperative Teacher, Department of Computer Science, University of Karachi (March 2015 – Dec 2015)**  
Teaching and conducting labs for undergraduate level courses including Programming Languages, Data Structures, Discrete Mathematics, Operations Research and Artificial Intelligence.
- 7) **Lecturer (Computer Science), Federal Govt. Degree College for Boys (December 2012 – December 2014)**  
Teaching computer studies courses at intermediate and degree level and maintaining IT infrastructure at college.
- 8) **Visiting Teacher Department of Computer Science, University of Karachi (August 2011 – December 2012)**  
Teaching courses of Discrete Mathematics, Artificial Intelligence, Expert Systems, Data Mining, Statistics and Software Engineering in Dept. of Computer Science, University of Karachi.

## **PROFESSIONAL EXPERIENCE**

- 1) **AI Solution Architect Datics.ai Solutions (December 2018 – May 2019)**

Working on formulating and developing Artificial Intelligence based solutions. Planning and executing research and development activities for various international clients.

## **2) Software Developer MicroSystems Ltd. (Feb 2009 – Dec 2012)**

Worked in MicroSystems Ltd as software developer. Worked on .Net 2.0, C#, ADO.net, CSGL, Network (socket) Programming. Experience to work in client-server architecture, Hardware Programming for controlling electronic devices.

## **PROGRAMMING SKILLS**

- Python (Pandas, Matplotlib, Jupyter Notebooks, Scikit-Learn, Keras)
- Working knowledge of data analysis languages and tools including Python, R, Matlab and IBM SPSS.
- Well acquainted with Python Machine Learning and Data Analysis Libraries including numpy, Scikit-Learn, Tensorflow etc.
- Profound and solid foundation of OOP language be it either C++, Java, C# or any other related language
- Worked on graphics programming using OGL in C++ and C#.
- Hands on experience to work on Databases using SQL Server and MySQL and their connectivity with frontend technologies.
- Working knowledge of web application technologies including HTML, CSS, JavaScript, Java Servlets and Springs Boot Framework.

## **CERTIFICATE COURSES**

- Attended certificate course of Linux System Administration from **CTTC Pvt. Ltd.**
- Completed Online course (MOOC) on Artificial Intelligence from **Stanford University** with 84% score in exams.
- Completed Online course (MOOC) on Machine Learning from **Stanford University** with 100% score in exams.
- Completed Online course (MOOC) on Data Scientist's Toolbox from **Johns Hopkins University**.

## **REFERENCES**

Available if required.