



Ghazanfar Latif, Ph.D.

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TEACHING / RESEARCH / INDUSTRY EXPERIENCE

May 2023 – Present

Acting Director, Center for Artificial Intelligence, Prince Mohammad Bin Fahd University, KSA

August 2022 – Present

Assistant Professor (Adjunct), Department of Computer Science, Superior University, Lahore, Pakistan

May 2021 – April 2023

Post-Doctoral Fellow/ Researcher (FRQNT), University of Quebec, Canada

June 2021 – Nov. 2021

Machine Learning Engineer for Drug Discovery, All4Cure - Health Information Technology Company, USA

Jan. 2019 – May 2021

Research Coordinator & Lecturer, Deanship of Research and Graduate Studies, Prince Mohammad bin Fahd University, KSA

Jan. 2014 – Jan. 2016

Lab Instructor, College of Computer Engineering and Sciences, Prince Mohammad Bin Fahd University, KSA

Sep. 2011 – Jan. 2022

Offshore Freelancer, 150+ Freelance Projects with 3000+ hours of work at UpWork.com

Aug. 2010 – Sep. 2011

Cloud EHR Engineer, CareCloud - MTBC® A Unique Healthcare IT Company in USA

SUMMARY

Highly motivated and qualified with extensive experience in the field of research, teaching, innovation, project development and management. Pursuing innovative projects involving computer vision, deep learning, artificial intelligence, medical imaging, language technologies, Internet of Things and imaging systems. My aim is to unravel complexities, drive innovation, and contribute to finding solutions to global challenges impacting the academic and industrial landscape. I am passionate about programming, research and innovation.

8+ years of Advanced Research/Teaching Experience	75+ ISI/Scopus Research Publications in AI/ML/IoT	Granted 5 US Patents and 4 are in process	Google Scholar h-index 23 and i-10 index 46 with 1759 citations
10+ years of offshore AI/ML/CV Industry Experience	Delivered presentation in 15+ Conferences	Acquired 8 International Research Grants	7 times 1st Position in International Events/Conferences
6 Professional Certifications and 3 Trainings	Designed 13 Courses and Labs Syllabi	14 different Courses and 7 Labs Taught	Worked on 150+ ML/AI/IT industry projects as Freelance
Certified Instructor for 20+ CISCO courses	20+ Senior Design Projects Supervision	Chaired 5+ Technical Committees	Merit Scholarships for MS, BS, FSc

RESEARCH AND DEVELOPMENT INTEREST

- 🔍 Artificial Intelligence
- 🔍 Medical Imaging
- 🔍 Internet of Things
- 🔍 Robotics
- 🔍 Machine Learning
- 🔍 Computer Vision
- 🔍 Cloud Computing
- 🔍 Smart Cities
- 🔍 Deep Learning
- 🔍 Generative AI
- 🔍 Cybersecurity
- 🔍 AR/VR/MR

EDUCATION

UNIVERSITY OF QUEBEC, CHICOUTIMI, CA

Département d'Informatique et de Mathématique (DIM) (2021-2022)
Post-Doctoral Fellow (*AI / ML / DL – Minerals Recognition*) *FRQNT Funding*

UNIVERSITY OF MALAYSIA, SARAWAK, MY

Faculty of Computer Science and Information Technology (2016-2021)
PhD (*Computer Science – Specialization in AI for Medical Diagnostics*) *Gold Medalist*

KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS, KSA

Information Computer Science Department (2011-2014)
MS-CS (*Computer Science – Specialization in Machine Learning*) *Full Scholarship*

NATIONAL UNIVERSITY COMPUTER AND EMERGING SCIENCES, PK

Computer Sciences Department (2006-2010)
BS (*Computer Science*) *Full Scholarship*

PUNJAB COLLEGE OF SCIENCE AND TECHNOLOGY, PK

Pre-Engineering Department (2004-2006)
FSc (*Pre-Engineering*) *Full Scholarship*



ACHIEVEMENTS AND AWARDS: ACADEMIC / RESEARCH / INDUSTRY

- 2024** 1. Awarded **Gold Medal** with Honor/Congratulations in 49th **Innovations Exhibition Geneva**, Switzerland where total 1,035 inventions were presented (April 17-22, 2024).
- 2023** 2. My patented project named **BlindLine** won the first position in **NEOM OXAGON Hackathon 2023** for Technology organized by the Ministry of Education Saudi Arabia out of 800 applications.
3. Received most **Research Productivity Award 2022-2023** from Prince Mohammad bin Fahd University.
- 2022** 4. Received an **honorary membership** of National Academy of Inventors (NAI), A member organization comprising most reputable U.S. and international universities.
- 2021** 5. Received **Permanent Residence in Canada (Quebec)** based on Special **Artificial Intelligence** Pilot Program.
6. Received **best PhD award along with Gold Mold and Shield** in the field of Machine Learning for Medical Diagnostics from University of Malaysia Sarawak, Malaysia.
7. Received most **Research Productivity Award 2020-2021** from Prince Mohammad bin Fahd University.
- 2019** 8. Got **best research paper award** in Current Research on Information Technology, Mathematics Sciences, Science and Technology (CRIMSTIC 2019), Melaka, Malaysia.
- 2018** 9. Got **best research paper award** in 7th International Conference on Computer Science, Engineering and Technologies (ICCSET 2018), Bangkok, Thailand.
10. Got **Bronze Award** in Innovation & Technology Exposition (InTEX 2018), Kuching, Malaysia for my research poster on “Automated Brain Tumor Detection, Analysis, and Visualization System”.
- 2011** 11. Got full time **scholarship** for MS in Computer Science from King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia.
- 2010** 12. Got **1st position** in Software & Hardware Competition in mega event ITEC-2010 held at NED University of Engineering and Technology, Karachi, Pakistan.
13. Got **1st position** in ACM Software Project Competition by presenting my Final Year Project “Brain Inspector” held in FAST-NUCES, Islamabad, Pakistan.
14. Got **1st position** in Software Competition while overall in Hardware & Software Competition got 2nd position in NUTEK-2010 Peshawar, Pakistan.
15. My Final Year Project “Brain Inspector” short-listed in Top four Software Project of Pakistan for **Microsoft Imagine Cup 2010** by Microsoft.
- 2009** 16. Got **Best** Marketing Promotional Campaign and Best Group Chemistry Merit Certificates in Marketing Mavericks PromoPower Competition 2009 organized by National University of Computer and Emerging Sciences, Islamabad, Pakistan.
- 2008** 17. Remained two times in FAST-NUCES **Dean’s Honor List** during BS-CS Degree, National University of Computer and Emerging Sciences, Islamabad Pakistan.
- 2006** 18. Got full merit **Scholarship** of 1.3 million rupees for BS Computer Science at National University of Computer and Emerging Sciences, form Ministry of Information Technology, Pakistan.
- 2004** 19. Got full merit **scholarship** for FSc Pre Engineering at Punjab College of Information Technology Multan from Punjab Group of Colleges, Pakistan.

ADVANCED SKILLS / TOOLS

- **Research Tools:** Anaconda, TensorFlow, OpenCV, Pandas, skLearn, pyTorch, NumPy, Keras, MATLAB, etc.
- **Machine Learning/ Deep Learning:** CNN, RNN, LSTM, MLP, Regression, Decision Trees, etc.
- **Virtual/Augmented Reality:** Oculus, VIVE Elite, RealWear, KatWalk VR, VIVE Cosmos, etc.
- **Robotics/Embedded Systems:** Rasberry Pi, Arduino, Temi Robot, MakeBlock, Dextor
- **Programming Languages:** Python, C, C++, VB, C#, Shell, Bash, Java, PHP, ASP.net, JavaScript, XML
- **Cloud Services:** Amazon Web Services, Rackspace, Windows Azure, Linode, GoogleCloud
- **Deployments:** Apache, IIS, MS-RDS, Live Streaming, Wowza, Red5, Adobe Encoder, Docker
- **Development Tools:** VS .NET, SQL Management Studio, NetBeans, Dreamweaver, Python IDE
- **Design Tools:** MS Visio, MS Project, Photoshop, Fireworks, Zend Framework, Premiere Pro
- **Operating Systems:** MS Server 2020/2016/2012, Linux, Raspbian, Ubuntu, RedHat, Android
- **Database Management:** MS SQL, My SQL, SPARQL, Oracle, phpMyAdmin
- **Technical Support:** Application Deployment and Bugs Fixing, Cloud Computing

PROFESSIONAL TRAININGS COMPLETED

1. Quality Practitioner Training Program for NCAAA Accreditation (2 to 3 November, 2022)
2. Palo Alto Networks Cybersecurity Academy, Saudi Arabia (7 to 10 April, 2020)
3. Windows Server Administration, Koing Solutions, Dubai, UAE (11 to 19 March, 2016)
4. CISCO CCNA Training, PMU, Khobar, Saudi Arabia (18 to 21 January, 2016)

INTERNATIONAL CERTIFICATIONS COMPLETED

1. Cloud Infrastructure and Services (EMC) (April 23, 2016)
2. IOE (Internet of Everything - Cisco) (February 19, 2016)
3. CCNA (Introduction to Networks - Cisco) (February 25, 2016)
4. ITE (Information Technology Essentials - Cisco) (January 26, 2016)
5. Entrepreneurship (Cisco) (February 19, 2016)
6. RackSpace Cloud Computing (RackSpace) (December 11, 2015)

PROFESSIONAL ASSOCIATIONS

- National Academy of Inventors (NAI) - Honorary membership (2022-Till Date)
- IEEE Full Membership (2017 – 2021)
- ACM Honorary Membership (2011-2012)

EXPERIENCE: TEACHING / RESEARCH / INDUSTRY

Acting Director, Center for Artificial Intelligence

(May 2023 – Present)

Prince Mohammad bin Fahd University (PMU), Saudi Arabia

- PMU (established in 2006) is ranked #1 in Arab World by THE and #590 around the World by the QS University Rankings.

Under my supervision, the center established two cutting-edge labs to boost AI research and innovation at PMU in 2023. These labs are equipped with state-of-the-art technologies and machinery to help researchers perform different experiments Devices (Olympus Microscope for Medical Imaging Data, Olympus Scanner, Temi Robot, Oculus, VIVE Cosmos, VIVE Elite, Realwear, KATwalk VR, HPC Server with 16 Tesla V100 GPUs, etc.).

The Center for Artificial Intelligence planned following activities for 2024 under my supervision:

- Develop a Generative AI model to be integrated with Humanoid Robots for advising.
- Build a PMU Campus Live Virtual Tour by current AI Center TEMI robots.
- Deliver a series of Workshops/Seminars (4) to promote awareness of Generative AI.
- Organize and host an International Conference on broad AI topics in collaboration with CCES.
- Enhance e-learning quality by using VR technology to establish a prototype for virtual classrooms.
- Conduct and sponsor a regional competition in AI to promote the PMU AI center.
- Recruit top 1% four researcher to be affiliated with the AI center.
- Increase Research Productivity (25 articles) of faculty involved with the center.

I played a key role in the development of the following degree plans at PMU:

- BS AI Degree Plan
- MS AI Degree Plan
- PhD AI Degree Plan

I played a supervising role in the establishment of following research Labs at PMU:

- AI HPC Lab (Server with 16 V100 GPUs, Olympus Microscope, Olympus Scanner,)
- AI VR/AR Lab (Temi Robot, Oculus, VIVE Cosmos, VIVE Elite, Realwear, KATwalk, NI Sound Processing)
- Robotics Lab (Zara Robot, NAO Robot, 3D Scanner, 3D Printer, PCB Printer, Quad Copter/Research Drones)
- Embedded Systems Lab (Rasberry Pi Kits, Arduino Kits, Dexter Kits, 50+ IoT sensors and other microcontrollers)

I also taught following courses at PMU:

- 🔗 Artificial Intelligence
- 🔗 System Programming
- 🔗 Requirements Engineering
- 🔗 Computer Vision
- 🔗 Computer Organization
- 🔗 Assessment III (Project)
- 🔗 Machine Learning
- 🔗 Business Intelligence
- 🔗 Software Architecture and Design

I also conducted several workshops at PMU and other places:

- Future Applications of Artificial Intelligence (PMU, KSA) –2024
- The Unstoppable Rise of Generative AI, Featuring ChatGPT Workshop (PMU, KSA) - 2023
- Patent Success Story: Ideas, Filing and Benefits (PMU, KSA) – 2023
- Research Webinar: Glioma Tumor Classification using Deep Learning (PMU, KSA) – 2023

University of Quebec, Canada

Conducting research and development on the industry-funded project on recognition of mineral grains from images by exploiting Artificial Intelligence and Machine Learning methods. The main focus of the project is to create new efficient solutions based on deep learning algorithms for Minerals Recognition. This project was directly funded by the Quebec, Canada Government for Nature and Technologies (FRQNT).

Mainly, I worked on the following during the fellowship:

- Collect mineral grain images using Olympus Microscope.
- Collection of grains annotations from the Scanning Electron Microscopy (SEM).
- Preprocessing the grains and adjustment of alignment using different image processing techniques.
- Grains segmentation using different computer vision techniques (superpixels, region growing, etc.).
- Feature extraction using Deep Learning, Color, Shape and Texture of the mineral grains.
- Classification of mineral grains using deep learning models and standard machine learning methods.

Assistant Professor (Adjunct)**(August 2022 – Present)****Superior University, Lahore, Pakistan**

Supervise and assist PhD and Master degree students with their research projects. My role involves guiding students through advanced research methodologies, providing technical expertise in algorithm development, machine learning, and data analytics, and facilitating the design and implementation of experimental frameworks. I also support students in the rigorous analysis and interpretation of complex datasets, ensuring the robustness and validity of their findings. Furthermore, I assist in the preparation of research articles and publications, ensuring that their work adheres to the highest academic standards and makes significant contributions to the field of computer science.

Machine Learning Expert – Engineer (Offshore)**(June 2021 – Nov. 2021)****All4Cure - Health Information Technology Company in USA**

I was the lead member of the team for the drugs entity and other metrics extraction from the progress notes for drugs discovery using the Natural Language Processing (NLP) and other machine learning techniques. The project was initially started for the Multiple Myeloma cancer patients progress notes which was extended to other types of Cancers. The system was able to visually captures entire cancer history by compiling medical records from all of your oncologists into a single comprehensive display. Input from other participants including patients, clinicians and researchers provide ideas that you and your doctor may wish to consider.

Research Coordinator & Lecturer– Deanship of Research and Graduate Studies**(Jan. 2019 – May 2021)****Prince Mohammad bin Fahd University (PMU), Saudi Arabia**

As Research Coordinator, main responsibilities included; overseeing and managing research projects, ensuring compliance for articles publication and funding. Provide support to researcher professors for interdisciplinary research, proposal development, grant applications, and budgeting, while also coordinating communication and collaboration among researchers and external partners.

At PMU, I also taught following courses:

- | | | |
|----------------------------|-------------------------|--------------------------------|
| 🔗 Artificial Intelligence | 🔗 Business Intelligence | 🔗 Machine Learning |
| 🔗 Introduction to IT | 🔗 Computer Vision | 🔗 Software Project Management |
| 🔗 System Programming | 🔗 Computer Organization | 🔗 Introduction to Cryptography |
| 🔗 Requirements Engineering | 🔗 Web Server Management | 🔗 Web Programming |

I played major role as key member in achieving following accreditations for PMU:

- ABET accreditation for Information Technology Department (2016-2028)
- ABET accreditation for Computer Engineering Department (2019-2028)
- NCAAA accreditation for the College of Computer Engineering and Sciences (2021-2026)

I developed the following new Courses at PMU:

- ☞ Deep Learning BS-AI
- ☞ Scripting Languages for AI (BS-AI)
- ☞ Introduction to Data Science (BS-CS)
- ☞ Machine Learning (MS-AI)
- ☞ Computer Graphics (MS-AI)
- ☞ Computer Vision (MS-AI)

I also conducted following workshops at PMU and other places:

- Machine Learning for Researchers (VMI, USA) – 2021
- Linux Administration (Ministry of IT, KSA) – 2020
- Machine Learning Workshop: Build your Research Skills (PMU, KSA) – 2019
- Java Programming for Advance Learners (PMU, KSA) – 2019
- Python Programming for IoT (PMU, KSA) – 2018
- System-On-Chip: Raspberry Pi (PMU, KSA) – 2018

Lab Instructor – College of Computer Engineering and Sciences

(Jan 2014 – Dec 2015)

Prince Mohammad bin Fahd University (PMU), Saudi Arabia

The teaching duties as Lab Instructor involved conducting hands-on laboratory sessions for Computer Science, IT, Computer Engineering courses, guiding students through practical exercises, and demonstrating the use of relevant software, programming languages, and equipment. Provide individualized assistance to students, ensuring a safe and productive lab environment while also managing and maintaining laboratory equipment and software.

I taught following courses Labs at PMU:

- ☞ Embedded Systems Lab
- ☞ Cloud Computing Lab
- ☞ System Programming Lab
- ☞ Computer Science II Lab
- ☞ Web Programming Lab
- ☞ Programming Languages Lab
- ☞ Data Structures Lab
- ☞ Computer Science I Lab
- ☞ Web Server Management Lab

I also developed manuals for the following new Labs at PMU:

- ☞ Embedded Systems Lab
- ☞ Cloud Computing Lab
- ☞ System Programming Lab

Cloud EHR Engineer

(Aug. 2010 – Sep. 2011)

CareCloud - MTBC® A Unique Healthcare IT Company (<http://www.carecloud.com/>)

I was part of the team who successfully designed, implemented, deployed and administered Cloud Based EHR/EMR applications by using the AWS EC2, VPC, CloudWatch, S3, CloudFront, SES, SNS, IAM, VPC Services. I had mainly following responsibilities for Web based and Desktop Based Cloud EHR Applications:

- Designing, developing, de-bugging and maintaining medical applications using C# and MS SQL.
- Work with the team to write test plans for components and overall system.
- Testing and installation of the Company's software's into the client machines.
- Setup of Auto Snapshot, AMI creation and deletion for backups, Different Cloud Watch Alarms.
- Setup of Auto Synchronization between the Live and Backup Servers.
- Maintaining the Security of the Server according the USA HIPPA Compliance.
- Optimize the Cost and enhance the performance of EC2 Servers through different ways.

Teacher Assistant (NUCES)

(Sep. 2008 – May 2010)

National University of Computer and Emerging Sciences (NUCES)

At NUCES, I was teaching assistant for the following courses:

- 1. Digital Image Processing Spring 2010
- 2. Software Engineering Spring 2010
- 3. Linear Algebra Fall 2009
- 4. Software Engineering Spring 2009
- 5. Numerical Analysis Fall 2008

MINISTRY OF IT (Pakistan) & FAST-NUCES

Worked as a Quality Assurance Officer for Outreach Scholarship Program supported by Ministry of IT and FAST National University of Computer and Emerging Sciences, in four Colleges of Dera Ghazi Khan Region.

CISCO Certified Instructor**(March 2016 – Present)****Cisco Networking Academy**

Eligible to teach following CISCO courses:

- | | |
|---|---|
| 1. IT Essentials: Hardware and Software | 12. Be Your Own Boss |
| 2. CCNA R&S: Introduction to Networks | 13. Packet Tracer Know How 1 |
| 3. CCNA R&S 6.0 Bridging | 14. Packet Tracer Know How 2 |
| 4. Networking Essentials | 15. Mobility Fundamentals |
| 5. Introduction to the Internet of Everything | 16. Partner: NDG Linux Essentials |
| 6. Introduction to IoT | 17. Partner: NDG Linux I |
| 7. Entrepreneurship | 18. Partner: NDG Linux II |
| 8. Introduction to Cybersecurity | 19. Partner: CPA - Programming in C++ |
| 9. Cybersecurity Essentials | 20. Partner: CLA - Programming in C |
| 10. Get Connected | 21. CCNA Discovery 1: Networking for Home |
| 11. Community: Smart Grid Essentials | 22. CCNA Exploration 1: Network Fundamental |

RESEARCH GRANTS

Following are the list of research funding I received for different projects:

- 2023** 1. Ghazanfar Latif (PI), 22,550 (SAR), Multilevel Medical Image Steganography: Secured Health Records in medical images without degrading their Quality. *PMU Cybersecurity Grants 2022, Prince Mohammed bin Fahd University, Saudi Arabia.*
2. Ghazanfar Latif (PI), 18,780 (SAR), Innovative Education System for the Blind: AI based Arabic Braille Language System. *Prince Mohammad Bin Fahd Center for Futuristic Studies (PMFCFS) Research Grant 2022, Prince Mohammed bin Fahd University, Saudi Arabia.*
- 2021** 3. Ghazanfar Latif (project team member), 90,800 (SAR), Fast Diagnosis of Covid-19 using Convolutional Neural Networks. *Qassim University, Grant # UCC-BS-2020-1-3-10146 from Ministry of Higher Education, Saudi Arabia.*
- 2021** 4. Ghazanfar Latif (project team member), 381,000 (CAD \$) valued grant that team secured at the “Fonds de recherche du Québec – Nature et technologies”, University of Quebec, Canada.
- 2020** 5. Ghazanfar Latif (PI), 27,500 (SAR), Medical Image Processing: Brain Tumor, Skin Cancer and Retinopathy Detection and Classification. Prince Mohammed bin Fahd University.
6. Ghazanfar Latif (Co-PI), 47,900 (SAR), Arabic Sign Language Recognition. Prince Mohammed bin Fahd University, Saudi Arabia.
7. Ghazanfar Latif (Co-PI), 20,500 (SAR), Evaluation of Machine Learning Techniques for Enhanced Image Understanding in Several Domains. Prince Mohammed bin Fahd University, Saudi Arabia
- 2017** 8. Ghazanfar Latif (Co-PI), 56,750 (SAR), A Study on the Confused Handwritten Indian (Arabic) Numerical images. Deanship of Research, Prince Mohammed bin Fahd University, Saudi Arabia.

RESEARCH PROJECT SAMPLES

1. **Post-Doctoral Project:** Mineral Grains Recognition and Classification (ML/AI)
2. **PhD Thesis:** Brain Tumor Classification using Deep Learning (ML / AI)
3. **MS Thesis:** Brain MRI Tumor Analysis and Classification using Deep Learning (ML / AI)
4. **BS Project:** Brain Inspector - Detection and 3D Visualization of Brain Tumor from MRI (AI)
5. Diabetic Retinopathy Detection using AI/Machine Learning (AI/ML)
6. Medical Images (CT/MRI, Ultrasound, Digital) Classification (AI)
7. Ultrasound Image Denoising and Despeckling (CV)
8. Text Classification (Tweets/Arabic Emails, Hate Speech) (NLP)
9. Plant Leaf Classification for Plant Diseases Detection (AI / ML)
10. Arabic Handwritten Text/Numerals Recognition (ML)
11. Arabic Spam Email Classification (ML)
12. Arabic Signature Verification (ML/ CV)
13. Arabic Sign Language Recognition (ML / DL)

EDITORIAL / INSTITUTIONAL SERVICE

- 2024 1. Editorial Board Member, Discover Artificial Intelligence, Springer Nature Journal.
2. Guest Editor, Algorithms Journal Special Issue (IF: 2.3) titled: “Advancing Smart Health and Biomedical Research with Artificial Intelligence Algorithms”.
3. Publication Committee Chair, 16th IEEE International Conference on Computational Intelligence and Communication Networks (CICN 2024), UAE.
- 2023 4. Guest Editor, Diagnostics Journal Special Issue (IF: 3.99) titled: “2nd Edition: AI/ML-Based Medical Image Processing and Analysis”.
- 2022 5. Chair, Technical Program Committee, 14th IEEE CICN Conference, Saudi Arabia.
6. Session Chair, Image Processing, Signal processing and Computer Vision Track, 14th IEEE CICN Conference.
7. Guest Editor, Diagnostics Journal Special Issue “AI/ML-Based Medical Image Processing and Analysis”.
- 2020 8. Chair of International Student Competitions Committee (PMU, KSA).
9. Lead Member of BS and MS in AI programs design Committee (PMU, KSA).
10. Member of Robotics Lab Committee (PMU, KSA).
11. Member of AI Lab Committee (PMU, KSA).
- 2019 12. Member of Scientific Research Committee (PMU, KSA).
13. Member of CCES Workshops Committee (PMU, KSA).
- 2016 14. Member of ABET Accreditation Committee (PMU, KSA)
15. Member of CCES Labs Committee (PMU, KSA)

INTERNATIONAL CONFERENCES ATTENDED AS PRESENTER

- 2024** 1. 49th International Exhibition of Inventions Geneva, Palexpo, Geneva, Switzerland.
2. 4th International Conference on Innovative Research in Applied Science, Engineering and Technology - IRASET'2024. Fes, Morocco, (IEEE).
- 2023** 3. 5th International Conference on Engineering Education and Innovation (ICEEI), Bali, Indonesia, (SPIE).
4. 9th International Conference on Modeling, Simulation and Applied Optimization (ICMSAO), Marrakech, Morocco, (AIP).
5. 2nd DeepFeast - LEAP Conference for Data and Artificial Intelligence, Riyadh, KSA.
- 2022** 6. 14th International Conference on Computational Intelligence and Communication Networks (CICN), Khobar, KSA, (IEEE).
- 2020** 7. International Conference on Research, Innovation and Vision for the Future, Vietnam, (IEEE – Virtual due to COVID).
8. International Conference on Communication, Computing and Electronics Systems (ICCCES), Coimbatore, India, (IEEE – Virtual due to COVID).
9. 3rd SMART Cities Symposium, IET Digital Library, Manama, Bahrain, (IET Inspect – Virtual due to COVID).
- 2019** 10. 4th Current Research on Information Technology, Mathematics Sciences, Science and Technology, Melaka, Malaysia, (Scopus).
11. International Conference on Computing and Big Data (ICCBD), Charleston, South Carolina, USA, (ACM).
- 2018** 12. 4th International Conference on Electrical and Electronic Engineering, Ankara, Turkey, (IEEE).
13. 8th International Conference on Biomedical Engineering and Technology (ICBET), Bali, Indonesia, (ACM).
14. 16th International Learning and Technology Conference: Artificial Intelligence and Machine Learning: Intelligence is Power, January, Jeddah, KSA, (Elsevier).
15. 7th International Conference on Computer Science, Engineering and Technologies (ICCSET), Bangkok, Thailand, (Scopus).
- 2017** 16. 4th International Conference on Engineering Technologies and Applied Sciences (ICETAS), Manama, Bahrain, (IEEE).
17. 10th International Conference on Information Technology in Asia (CITA'17), Kuching, Malaysia, (Scopus).
18. 2nd International Conference on Emerging Research for Sustainable Economic Development (ERSED-2017), Manama, Bahrain.
- 2013** 19. International Conference on Technology for Helping People with Special Needs (ICTHP), Riyadh, KSA.
- 2012** 20. 3rd Scientific Conference, Ministry of Higher Education, Khobar, KSA.

US PATENTS / RESEARCH PUBLICATIONS

US Patents

(Total Patents Granted: 5)

- 2023 1. U.S. Patent No. US11829959B1: **Ghazanfar Latif**, Ghassen Ben Brahim (2023). System and methods for fully autonomous potholes detection and road repair determination. *Washington, DC: U.S. Patent and Trademark Office*. <https://patents.google.com/patent/US11829959B1/en>.
2. U.S. Patent No. US11748588B1: **Ghazanfar Latif**, Ghassen Ben Brahim (2023). Automated Secure Paper Tray Access and Paper Quota Management System for Public Printers. *Washington, DC: U.S. Patent and Trademark Office*. <https://patents.google.com/patent/US11748588B1>.
3. U.S. Patent No. US11755687B2: Khan, M. A., Mohammad, N., Brahim, G. B., Bashar, A., **Ghazanfar Latif**. (2023). Text independent writer verification method and system. *Washington, DC: U.S. Patent and Trademark Office*. <https://patents.google.com/patent/US20230112880A1>.
- 2022 4. U.S. Patent No. US11227387B2: **Ghazanfar Latif**, (2022). Multi-stage brain tumor image processing method and system. *Washington, DC: U.S. Patent and Trademark Office*. <https://patents.google.com/patent/US11227387B2>.
5. U.S. Patent No. US11393361B1: **Ghazanfar Latif**., Alghazo, J., Alufaisan, S., Albur, W., & Alsedrah, S. (2022). Braille Reader System using Deep Learning Framework. *Washington, DC: U.S. Patent and Trademark Office*. <https://patents.google.com/patent/US11393361B1/en>

International Journal Articles

(Total: 48 – IF: 87.56, Corresponding Author: 94%, First Author 60%)

- 2024 6. **Ghazanfar Latif**, Alghazo, J., Khan, M. A., Brahim, G. B., Fawagreh, K., & Mohammad, N. (2024). Deep convolutional neural network (CNN) model optimization techniques—Review for medical imaging. *AIMS Mathematics*, 9(8), 20539-20571.
(ISI Impact Factor:1.8).
7. Hasanaath A.A., Mohammed A.S, **Ghazanfar Latif**, Sherif E. A, Alghazo J., Hussain A. A., (2024), Acute Lymphoblastic Leukemia detection using Ensemble Features from multiple deep CNN Models, *Electronic Research Archive*, 32 (4), 2407-2423.
(ISI Impact Factor:0.8).
8. **Ghazanfar Latif**, Alghazo J., Mohammad, N., Sherif E. A, Alghazo J., Brahim, G. B., & Amjad, K. (2024), A Novel Fragmented Approach for Securing Medical Health Records in Multimodal Medical Images, *Applied Sciences (in press)*.
(ISI Impact Factor:2.838).
- 2023 9. **Ghazanfar Latif**, Bashar, A., Awang Iskandar, D. N. F., Mohammad, N., Brahim, G. B., & Alghazo, J. M. (2023). Multiclass tumor identification using combined texture and statistical features. *Medical & biological engineering & computing*, 61(1), 45-59.
(ISI Impact Factor: 3.079).
10. Alghazo, J., **Ghazanfar Latif** (2023). Editorial: AI/ML-Based Medical Image Processing and Analysis. *Diagnostics*, 13(24), 3671.
(ISI Impact Factor: 3.992).
11. Mohammed, A. S., Hasanaath, A. A., **Ghazanfar Latif**, & Bashar, A. (2023). Knee Osteoarthritis Detection and Severity Classification Using Residual Neural Networks on Preprocessed X-ray Images. *Diagnostics*, 13(8), 1380.
(ISI Impact Factor: 3.992).
12. **Ghazanfar Latif**, Alghmgham, D. A., Maheswar, R., Alghazo, J., Sibai, F., & Aly, M. H. (2023). Deep learning in Transportation: Optimized driven deep residual networks for Arabic traffic sign recognition. *Alexandria Engineering Journal*, 80, 134-143.
(ISI Impact Factor: 6.8).

13. **Ghazanfar Latif**, Brahim, G. B., Abdelhamid, S. E., Alghazo, R., Alhabib, G., & Alnujaidi, K. (2023). Learning at Your Fingertips: An Innovative IoT-Based AI-Powered Braille Learning System. *Applied System Innovation*, 6(5), 91.
(*ISI Impact Factor: 3.8*).
14. **Ghazanfar Latif**, Nazeeruddin Mohammad, and Jaafar Alghazo. "DeepFruit: A dataset of fruit images for fruit classification and calories calculation." *Data in Brief* 50 (2023): 109524.
(*ISI Impact Factor: 1.2*).
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(IEEE, Scopus).
66. Saleh Al-Faraj, Mustafa Al-Bahrani, Saeed Al-Ghamdi, Marwan Rafie, Abul Bashar, **Ghazanfar Latif**, CNN-based Alphabet Identification and Sorting Robotic Arm, *International Conference on Communication, Computing and Electronics Systems (ICCCES 2020)*. Springer.
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67. Shurouq Alufaisan, Wafa Albur, Shaikha Alsedrah, and **Ghazanfar Latif**, Arabic Braille Numeral Recognition using Convolutional Neural Networks, *International Conference on Communication, Computing and Electronics Systems (ICCCES 2020)*. Springer.
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77. **Ghazanfar Latif**, D.N.F. Awang Iskandar, Jaafar Alghazo, Multiclass Brain Tumor Classification using Region Growing based Tumor Segmentation and Ensemble Wavelet Features, *International Conference on Computing and Big Data (ICCBD 2018)*, Charleston, South Carolina, USA (ACM).
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78. **Ghazanfar Latif**, Jaafar Alghazo, Loay Alzubaidi, M. Muzzamal Naseer, Yazan Alghazo, Deep Convolutional Neural Network for Recognition of Unified Multi-Language Handwritten Numerals, *2nd IEEE Int. Workshop on Arabic and derived Script Analysis and Recognition (ASAR)*, March 12-14, 2018, The Alan Turing Institute, London, UK.
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(IEEE, Scopus).
- 2017** 80. **Ghazanfar Latif**, M. Mohsin Butt, Adil H. Khan, Omair Butt, and DNF Awang Iskandar. "Multiclass brain Glioma tumor classification using block-based 3D Wavelet features of MR images." In *4th International Conference on Electrical and Electronic Engineering (ICEEE)*, pp. 333-337, Ankara Turkey, IEEE.
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83. **Ghazanfar Latif**, Adil H. Khan, M. Mohsin Butt, Omair Butt, IoT based Real-time Voice Analysis and Smart Monitoring System for Disabled People, *International Conference on Advanced Research (ICAR- 2017)*, Manama Bahrain, pp. 191-199.
84. Jaafar M. Alghazo, Faisal Yousif Al Anezi, **Ghazanfar Latif**, Mohammad Mohsin Butt, Sustainable Economic Development through IT Workforce in Saudi Arabia, *2nd International Conference on Emerging Research for Sustainable Economic Development (2nd ERSED-2017)*, Manama Bahrain.
- 2013** 85. **Ghazanfar Latif**, Muhammad Mohsin Butt, and Adil Humayun Khan, Eye Click: Eye Gaze based User Interface for the Disabled People, *International Conference on Technology for Helping People with Special Needs (ICTHP-2013)*, Saudi Arabia.
- 2010** 86. Qurat-Ul-Ain, **Ghazanfar Latif**, Sidra Batool Kazmi, M. Arfan Jaffar, and Anwar M. Mirza, Classification and Segmentation of Brain Tumor using Texture Analysis, in *International Conference on Artificial Intelligence, Knowledge Engineering and Databases (AIKED 2010)*, University of Cambridge UK Pages: 147-155.

- 2023 87. **Ghazanfar Latif**, Jaafar Alghazo, and Zafar Kazmi (2023), Security Enabling for IoT and Wireless Sensor Networks based Data Communication, *Advanced Wireless Communication and Sensor Networks: Applications and Simulations*, Taylor & Francis.
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88. **Ghazanfar Latif**, Jaafar Alghazo, and Sherif E. Abdelhamid (2022), Social Impacts of Technology with the Emergence of IoT, 5G and Artificial Intelligence, *Advanced Wireless Communication and Sensor Networks: Applications and Simulations*, Taylor & Francis.
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- 2020 89. **Ghazanfar Latif**, Alghazo, J. M., Maheswar, R., Sampathkumar, A., & Sountharajan, S. (2020). IoT in the Field of the Future Digital Oil Fields and Smart Wells. In *Internet of Things in Smart Technologies for Sustainable Urban Development* (pp. 1-17). Springer, Cham.
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90. **Ghazanfar Latif**, Alghazo, J. M., Maheswar, R., Jayarajan, P., & Sampathkumar, A. (2020). Internet of Things: Reformation of Garment Stores and Retail Shop Business Process. In *Integration of WSN and IoT for Smart Cities* (pp. 115-128). Springer, Cham.
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91. **Ghazanfar Latif**, Alghazo, J. M., Maheswar, R., Jayarajan, P., & Sampathkumar, A. (2020). Impact of IoT-Based Smart Cities on Human Daily Life. In *Integration of WSN and IoT for Smart Cities* (pp. 103-114). Springer, Cham.
(Springer, Scopus).
92. Debnath, Biswajit, Jaafar M. Alghazo, **Ghazanfar Latif**, Reshma Roychoudhuri, and Sadhan Kumar Ghosh. "An Analysis of Data Security and Potential Threat from IT Assets for Middle Card Players, Institutions and Individuals." In *Sustainable Waste Management: Policies and Case Studies*, pp. 403-419. Springer, Singapore, 2020.
(Springer, Scopus).
- 2019 93. **Ghazanfar Latif**, Jaafar Alghazo, (2019), IoT based Cloud based Rx Healthcare Expert System, Fog Computing for Healthcare 4.0 Environments: Technical, Societal, and Future Implications, Springer.
(Springer, Scopus).

Research Poster Presentations

(Total Posters: 5)

- 2023 94. **Ghazanfar Latif**, Khalid Alnujaidi, Ghadah Alhabib, Innovative Education System for the Blind: AI based Arabic Braille Language System, *Technology in the Service of People, NEOM Oxagon Hackathon, 2022*, Riyadh, Saudi Arabia.
- 2020 95. Wafa Albur, Shorouq Alufaisan, Shaikha Alsedrah, **Ghazanfar Latif**, Arabic Braille Words Recognition using Deep Learning Techniques, *2020 PMU International Conference on Industrial Revolution 4.0 in Computing, Mobility, and Manufacturing (CMM 2020)*, Khobar, Saudi Arabia.
- 2019 96. Shahad Abdullah Alghamdi, Lama Adel Boubshait, Reem Ali Alsadiq, **Ghazanfar Latif**, Jaafar Alghazo, Arabic Handwritten Word Recognition using Deep Convolutional Neural Networks, *IEEE International Conference on Imaging Systems & Techniques (IST)*, 2019, Abu Dhabi, UAE.
97. Nouf Aljasim, Ayat Alali, Zahra Alhamad, **Ghazanfar Latif**, Jaafar Alghazo, Detection of defects in Oil-Pipes using Autonomous Robots through Image Analysis, *IEEE International Conference on Imaging Systems & Techniques (IST)*, 2019, Abu Dhabi, UAE.
- 2018 98. **Ghazanfar Latif**, Dayang Nurfatimah, Automated Brain Tumor Detection, Analysis, and Visualization System, *Innovation & Technology Exposition (InTEX18)*, Kuching, Malaysia, 2018.

INDUSTRY FREELANCE PROJECTS (OUTSOURCED)

Infrastructure / AI/ML/ Cloud Computing / Big Data

(Sept. 2011 – Jan. 2022)

Number of Projects/Jobs Completed: **150+**
 Total Earning: **150,000+ USD**
 Number of work hours: **3000+**
 Clients Review Score: **4.51/5 (www.upwork.com)**

#	Project Title	Project Duration	Country
1	AI Transfer Learning: Peptides identification from proteins data – DeepDIA project	Sep 10, 2021 - Nov 03, 2021	Germany
2	Machine Learning Engineer (Natural Language Processing for Medical Data – Drug Discovery)	Jun 18, 2021 – Oct 26, 2021	USA
3	Deep Learning and Image Processing for Tooth Diseases	Aug 23, 2021 - Oct 01, 2021	Japan
4	LSTM Deep/Machine Learning Project Tone Up	Jul 23, 2021 – Aug 2, 2021	USA
5	Feature Extraction (NLP) using Python	Jun 24, 2021 - Jun 28, 2021	Greece
6	CNN, Tensorflow and Colab	Jul 4, 2021 – Jul 27, 2021	Australia
7	Design a Variational-Convolutional Autoencoder	Jun 15, 2021 – Jun 21, 2021	USA
8	MATLAB Expert for Streaming Data	Jun 27, 2021 – Jul 2, 2021	Saudi Arabia
9	Computer Vision Expert	Jun 12, 2021 - Jun 17, 2021	Canada
10	Build an API for Handwritten Characters Recognition	July 19, 2021 – Oct 8, 2021	USA
11	Valeriy Rasskazov / Amazon AWS Monitoring software	Sep 09, 2013 – Mar., 2014	Australia
12	Ambient BP / Incorporating 26 video files into website in the most efficient way.	Aug 23, 2013 - Mar, 2014	USA
13	Coresoft / Amazon AWS Systems Specialist	Aug 08, 2013 - Mar, 2014	Singapore
14	tekcp / Site Disaster recovery to the Cloud	Aug 08, 2013 - Mar, 2014	Canada
15	Josh Lindsteadt / Need Web Developer to build SaaS website	Jul 31, 2013 - Mar, 2014	USA
16	Katy Computer Specialists / PHP Developer	Jul 02, 2013 - Jan, 2014	USA
17	Portoformia / Cloud architecture designer	Jun 24, 2013 - Jan, 2014	USA
18	Speaktopic ApS / Design of architechure for Amazon Cloud website	Jun 19, 2013 – Jan, 2014	Denmark
19	Phoner / AWS SES Tech	Jun 14, 2013 - Dec, 2013	USA
20	DataZoo Media / Amazon Elastic Transcoder	May 15, 2013 - Dec, 2013	Canada
21	medical ent / Software Design and Development	Apr 12, 2013 – Dec, 2013	USA
22	MediaLeaf Technologies, Inc. / Need Help Writing Amazon S3 Bucket Access Policy	Aug 16, 2013 - Sep 10, 2013	Australia
23	Bawn Media Networks, Inc / Video Streaming Platform Development	Aug 02, 2013 - Sep 02, 2013	USA
24	Media Perfection / JW Player Expert	Aug 01, 2013 - Aug 04, 2013	USA
25	songphon phapatha / AWS Setup	May 01, 2013 - May 11, 2013	Thailand
26	SensibleS (1) / ec2	Feb 12, 2012 - Jan 25, 2013	USA
27	Techsided Solutions / Cloud Architect	Jan 21, 2012 - Jul 06, 2012	USA
28	JeFrench / Ezs3 Expert	Apr 17, 2012 - Jun 16, 2012	USA
29	GRR Systems, Inc. / EC2 Consultant	Mar 26, 2012 - May 03, 2012	Canada
30	Local Advertising 411 / Amazon S3 content	Jan 20, 2012 - Apr 24, 2012	USA

31	GOCHIPI / Expert	Oct 12, 2011 - Apr 13, 2012	USA
32	N/A / AWS designer	Oct 25, 2011 - Feb 20, 2012	USA
33	Helpmewithdotnet / ASP.NET Web Developer	Oct 29, 2011 - Feb 17, 2012	Canada
34	hsouza / Cloud Computing Architect	Oct 22, 2011 - Feb 13, 2012	USA
35	Diasol AB / Amazon EC2	Nov 03, 2011 - Feb 07, 2012	Sweden
36	tg2000 / Video pages	Feb 03, 2012 - Feb 06, 2012	Cyprus
37	ADIL / Amazon ec2 expert	Jan 24, 2012 - Jan 26, 2012	Saudi Arabia
38	Robert G. / Amazon API Developer	Dec 19, 2011 - Dec 28, 2011	Canada
39	Bonnell Street Enterprises, Inc. / AWS Guru	Nov 14, 2011 - Dec 05, 2011	USA
40	New World Media Irl / AWS Module 3&4	Oct 11, 2011 - Nov 29, 2011	Ireland
41	RevUp Render, Inc. / EC2 Expert	Oct 27, 2011 - Nov 26, 2011	USA
42	GSG Networks Pte. Ltd. › movies / Flash Video Player	Nov 18, 2011 - Nov 22, 2011	Singapore
43	Push 3 Marketing / amazon S3 and CloudFront configuration	Nov 05, 2011 - Nov 06, 2011	USA
44	Helpmewithdotnet / AWS EC2 VPC Configuration Assistance	Oct 20, 2011 - Oct 27, 2011	Canada
45	internetdata / Senior Amazon AWS / ECS Server Administrator	Oct 12, 2011 - Oct 27, 2011	USA
46	internetdata / server work	Oct 10, 2011 - Oct 11, 2011	USA
47	New World Media Irl / AWS	Oct 04, 2011 - Oct 10, 2011	Ireland
48	ZoomRadar / Image Manipulation Specialist	Aug 18, 2011 - Oct 04, 2011	USA
49	New World Media Irl / AWS Scripting	Sep 16, 2011 - Oct 03, 2011	Ireland
50	Filmhauer / Expert: Migrate from Shared Web to Amazon EC2	Aug 31, 2011 - Sep 14, 2011	Spain

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