TEACHING/ RESEARCH/ INDUSTRY EXPERIENCE

May 2023 – Present
Acting Director, Center for Artificial Intelligence, Prince Mohammad Bin Fahd University, KSA

May 2021 – April 2023
Post-Doctoral Fellow/ Researcher, University of Quebec, Canada

Jan. 2019 – May 2021
Research Coordinator, 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

June 2007 – Sep. 2022
Quality Assurance Officer, Outreach Scholarship Program supported by Ministry of IT and NUCES

Ghazanfar Latif, Ph.D.

⌂ Canadian Permanent Resident (Quebec AI Pilot Program)
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SUMMARY

Highly motivated and qualified with extensive experience in the field of research, innovation, project development and management. Pursuing innovative projects involving artificial intelligence, language technologies, computer vision, deep learning and medical diagnostics. 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 teaching, research and mentoring students.

8+ years of University Teaching/ Research Experience	85+ ISI/Scopus Research Publications in **AI/ML**	Granted **5** US Patents and **2** are in process	Google Scholar h-index **26** and i-10 index **46** with 1421 citations
7 times **1st** Position in International Events/Conferences	Delivered presentation in **15+** Conferences	Acquired **8** International Research Grants	**10+** years of offshore AI/ML/CV Industry Experience
6 Professional Certifications and **3** Trainings	Designed **13** Courses and Labs Syllabi	**12** 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
- Internet of Things
- Data Mining
- Generative AI
- Minerals Recognition
- Machine Learning
- Big Data Analysis
- Software Engineering
- Data Science
- Computer Vision
- Deep Learning
- Robotics

EDUCATION

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

UNIVERSITY OF MALAYSIA, SARAWAK
Faculty of Computer Science and Information Technology (2016-2021)
PhD *(Computer Science – Specialization in AI / Deep Learning)* *Gold Medalist*

KING FAHD UNIVERSITY OF PETROLEUM AND MINERALS
Information Computer Science Department (2011-2014)
MS-CS *(Computer Science – Specialization in Machine Learning)* *Full Scholarship*

NATIONAL UNIVERSITY COMPUTER AND EMERGING SCIENCES
Computer Sciences Department (2006-2010)
BS *(Computer Science)* *Full Scholarship*

PUNJAB COLLEGE OF SCIENCE AND TECHNOLOGY
Pre-Engineering Department (2004-2006)
FSc *(Pre-Engineering)* *Full Scholarship*

ACHIEVEMENTS AND AWARDS: ACADEMIC / RESEARCH / INDUSTRY

2023
1. 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.
2. Received most **Research Productivity Award 2022-2023** from Prince Mohammad bin Fahd University.

2022
3. Received an **honorary membership** of National Academy of Inventors (NAI), A member organization comprising most reputable U.S. and international universities.

2021
4. Received **Permanent Residence in Canada (Quebec)** based on Special **Artificial Intelligence** Pilot Program.
5. Received **best PhD award along with Gold Mold and Shield** in the field of Machine Learning from University of Malaysia Sarawak, Malaysia.
6. Received most **Research Productivity Award 2020-2021** from Prince Mohammad bin Fahd University.

2019
7. Got **best research paper award** in Current Research on Information Technology, Mathematics Sciences, Science and Technology (CRIMSTIC 2019), Melaka, Malaysia.

2018
8. Got **best research paper award** in 7th International Conference on Computer Science, Engineering and Technologies (ICCSET 2018), Bangkok, Thailand.
9. 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
10. Got full time **scholarship** for MS in Computer Science from King Fahd University of Petroleum and Minerals, Dhahran, Saudi Arabia.

2010
11. Got **1st position** in Software & Hardware Competition in mega event ITEC-2010 held at NED University of Engineering and Technology, Karachi, Pakistan.
12. Got **1st position** in ACM Software Project Competition by presenting my Final Year Project "Brain Inspector" held in FAST-NUCES, Islamabad, Pakistan.
13. Got **1st position** in Software Competition while overall in Hardware & Software Competition got 2nd position in NUTEC-2010 Peshawar, Pakistan.
14. My Final Year Project "Brain Inspector" short-listed in Top four Software Project of Pakistan for **Microsoft Imagine Cup 2010** by Microsoft.

2009
15. 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
16. Remained two times in FAST-NUCES **Dean's Honor List** during BS-CS Degree, National University of Computer and Emerging Sciences, Islamabad Pakistan.

2006
17. 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
18. 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) — (Feburary 19, 2016)
3. CCNA (Introduction to Networks - Cisco) — (Feburary 25, 2016)
4. ITE (Information Technology Essentials - Cisco) — (January 26, 2016)
5. Entrepreneurship (Cisco) — (Feburary 19, 2016)
6. RackSpace Cloud Computing (RackSpace) — (December 11, 2015)

PROFESSIONAL ASSOSIATIONS

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

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 (Temi Robot, Oculus, Olympus Microscope, Olympus Scanner, VIVE Cosmos, VIVE Elite, Realwear, KATwalk VR, HPC Server with 16 Tesla V100 GPUs, etc.).

The center is planned for the following activities for 2024 under my supervision:

- Develop a Generative AI model to be integrated with Humanoid Robots for student 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:

- <u>AI HPC Lab</u> (Server with 16 V100 GPUs, Olympus Microscope, Olympus Scanner,)

- <u>AI VR/AR Lab</u> (Temi Robot, Oculus, VIVE Cosmos, VIVE Elite, Realwear, KATwalk, NI Sound Processing)

- <u>Robotics Lab</u> (Zara Robot, NAO Robot, 3D Scanner, 3D Printer, PCB Printer, Quad Copter/Research Drones)

- <u>Embedded Systems Lab</u> (Rasberry Pi Kits, Arduino Kits, Dexter Kits, 50+ IoT sensors and other microcontrollers)

Post-Doctoral Fellow/ Researcher   **(May 2021 – April 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.

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 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 – 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:

1. Computer Vision   (Taught 4 times)
2. Artificial Intelligence   (Taught 8 times)
3. Machine Learning   (Taught 3 time)
4. Computer Organization   (Taught 8 times)
5. System Programming   (Taught 7 times)
6. Web Server Management   (Taught 1 time)
7. Business Intelligence   (Taught 2 time)
8. Introduction to Cryptography   (Taught 1 time)
9. Assessment III (Senior Design Project)   (Taught 5 times)
10. Introduction to Computer Concepts and Applications   (Taught 6 times)
11. Requirements Engineering   (Taught 2 times)
12. Software Architecture and Design   (Taught 2 times)
13. Introduction to Information Technology   (Taught 2 times)

I developed the following new Courses at PMU:

1. Deep Learning   (BS-AI)
2. Machine Learning   (MS-AI)
3. Computer Vision and Pattern Recognition   (MS-AI)
4. Computer Graphics   (MS-AI)
5. Scripting Languages for AI   (BS-AI)
6. Introduction to Data Science   (BS-CS)
7. System Programming   (BS-IT)

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).
- Accreditation from the National Commission for Academic Accreditation and Assessment - NCAAA (2021).

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.

At PMU, I also conducted following Labs:

1. Embedded Systems Lab   (Taught 10 times)
2. System Programming Lab   (Taught 7 times)
3. Computer Science Lab   (Taught 8 times)
4. Programming Languages Lab   (Taught 3 times)
5. Circuits-I Lab   (Taught 4 times)
6. Web Server Management Lab   (Taught 1 time)

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

1. System Programming Lab   3. Embedded Systems Lab
2. Cloud Computing   4. Synthesis with Hardware Descriptive Languages

AML Cloud Based PLS Manger (Offshore)   (Sep. 2011-April 2012)

Medical Licensing Service, American Medical Logistics (http://physicianlicensing.com/)

I was one of the key members of the team who developed AML-PLS and I managed this whole System on Cloud. Atlas DS, American Medical Logistics has pioneered technology to securely store proprietary information, merge the information with applications for purposes of Licensing, Credentialing, Insurance & Medicaid/Medicare enrollment, and DEA registration, and have the information & processes available to clients 24 hours a day, 7 days a week.

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

Quality Assurance Officer   (June 2007 – Sep. 2007)

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

RESEARCH GRANTS

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

2023

1. Ghazanfar Latif (PI), <u>22,550 (SAR)</u>, 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), <u>18,780 (SAR)</u>, 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), <u>381,000 (CAD $)</u> valued grant that team secured at the "Fonds de recherche du Québec – Nature et technologies", University of Quebec, Canada.

2021

4. Ghazanfar Latif (project team member), <u>90,800 (SAR)</u>, Fast Diagnosis of Covid-19 using Convolutional Neural Networks. *Qassim University, Grant # UCC-BS-2020-1-3-10146 from Ministry of Higher Educatio*n, Saudi Arabia.

2020

5. Ghazanfar Latif (PI), <u>27,500 (SAR)</u>, Medical Image Processing: Brain Tumor, Skin Cancer and Retinopathy Detection and Classification. Prince Mohammed bin Fahd University.

6. Ghazanfar Latif (Co-PI), <u>47,900 (SAR)</u>, Arabic Sign Language Recognition. Prince Mohammed bin Fahd University, Saudi Arabia.

7. Ghazanfar Latif (Co-PI), <u>20,500 (SAR)</u>, 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), <u>56,750 (SAR)</u>, 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. Plant Leaf Classification for Plant Diseases Detection   **(AI / ML)**

6. Medical Images (CT/MRI, Ultrasound, Digital) Classification　　　　　　　**(AI)**

7. Ultrasound Image Denoising and Despeckling　　　　　　　**(Image Processing)**

8. Text Classification (Tweets/Arabic Emails, Hate Speech)　　　　　　　**(NLP**)

9. Arabic Handwritten Text/Numerals Recognition　　　　　　　**(ML)**

10. Arabic Spam Email Classification　　　　　　　**(ML)**

11. Arabic Signature Verification　　　　　　　**(ML/ Image Processing)**

12. Arabic Sign Language Recognition　　　　　　　**(ML / Deep Learning)**

EDITORIAL / INSTITUTIONAL SERVICE

2024　1. Guest Editor, <u>Algorithms</u> Journal Special Issue (IF: 2.3) titled: "Advancing Smart Health and Biomedical Research with Artificial Intelligence Algorithms".

2023　2. Guest Editor, <u>Diagnostics</u> Journal Special Issue (IF: 3.99) titled: "2nd Edition: AI/ML-Based Medical Image Processing and Analysis".

2022　3. Chair, Technical Program Committee, 14th IEEE CICN Conference, Saudi Arabia.

　　　4. Session Chair, Image Processing, Signal processing and Computer Vision Track, 14th IEEE CICN Conference.

　　　5. Guest Editor, <u>Diagnostics</u> Journal Special Issue (IF: 3.99) titled: "AI/ML-Based Medical Image Processing and Analysis".

2020　6. Chair of International Student Competitions Committee (PMU, KSA).

　　　7. Lead Member of BS and MS in AI programs design Committee (PMU, KSA).

　　　8. Member of Robotics Lab Committee (PMU, KSA).

　　　9. Member of AI Lab Committee (PMU, KSA).

2019　10. Member of Scientific Research Committee (PMU, KSA).

　　　11. Member of CCES Workshops Committee (PMU, KSA).

2016　12. Member of ABET Accreditation Committee (PMU, KSA)

　　　13. Member of CCES Labs Committee (PMU, KSA)

INTERNATIONAL CONFERENCES ATTENDED AS PRESENTER

2023　1. 5th International Conference on Engineering Education and Innovation (ICEEI), Bali, Indonesia, (SPIE).

　　　2. 9th International Conference on Modeling, Simulation and Applied Optimization (ICMSAO), Marrakech, Morocco, (AIP).

2022　3. 14th International Conference on Computational Intelligence and Communication Networks (CICN), Khobar, Saudi Arabia, (IEEE).

2020　4. International Conference on Research, Innovation and Vision for the Future, Vietnam, (IEEE – Virtual due to COVID).

　　　5. International Conference on Communication, Computing and Electronics Systems (ICCCES), Coimbatore, India, (IEEE – Virtual due to COVID).

　　　6. 3rd SMART Cities Symposium, IET Digital Library, Manama, Bahrain, (IET Inspect – Virtual due to COVID).

| **2019** | 7. | 4th Current Research on Information Technology, Mathematics Sciences, Science and Technology, Melaka, Malaysia, (Scopus). |

2019 7. 4th Current Research on Information Technology, Mathematics Sciences, Science and Technology, Melaka, Malaysia, (Scopus).

8. International Conference on Computing and Big Data (ICCBD), Charleston, South Carolina, USA, (ACM).

2018 9. 4th International Conference on Electrical and Electronic Engineering, Ankara Turkey, (IEEE).

10. 8th International Conference on Biomedical Engineering and Technology (ICBET), Bali, Indonesia, (ACM).

11. 16th International Learning and Technology Conference: Artificial Intelligence and Machine Learning: Intelligence is Power, January, Jeddah, Saudi Arabia, (Elsevier).

12. 7th International Conference on Computer Science, Engineering and Technologies (ICCSET), Bangkok, Thailand, (Scopus).

2017 13. 4th International Conference on Engineering Technologies and Applied Sciences (ICETAS), Manama, Bahrain, (IEEE).

14. 10th International Conference on Information Technology in Asia (CITA`17), Kuching, Malaysia, (Scopus).

2013 15. International Conference on Technology for Helping People with Special Needs (ICTHP), Riyadh, KSA.

2012 16. 3rd Scientific Conference, Ministry of Higher Education, Khobar, KSA.

US PATENTS / RESEARCH PUBLICATIONS

US Patents (Total 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: 45 – IF 84.727, Corresponding Author: 92%, First Author 57%)

2023 6. **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***).

7. **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***).

8. Alghazo, J., **Ghazanfar Latif** (2023). AI/ML-Based Medical Image Processing and Analysis. *Diagnostics*, *13*(24), 3671.

(***ISI Impact Factor: 3.6***).

9. **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***).

10. **Ghazanfar Latif**, Sherif E. Abdelhamid, Khaled S Fawagreh, Ghassen Ben Brahim, Runna Alghazo (2023), Machine Learning in Higher Education: Students' Performance Assessment considering Online Activity Logs, *IEEE Access,* 11, 69586 - 69600.

(***ISI Impact Factor: 3.476***).

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**, 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***).

13. Alghazo, J., **Ghazanfar Latif**, Hammad, B., Al-Abed, M., Sibai, F., & Al-Kouz, W. (2023). Prediction of the Performance of a Sun Tracking Photovoltaic System using different Artificial Intelligence Techniques: Case Study in Zarqa, Jordan. *International Journal of Computing and Digital Systems*, 14 (1), 10337-10345.

(***Scopus Indexed Journal***).

2022 14. **Ghazanfar Latif**, (2022). DeepTumor: Framework for Brain MR Image Classification, Segmentation and Tumor Detection, *Diagnostics,* 12, no. 11 (2022): 2888.

(***ISI Impact Factor: 3.992***).

15. **Ghazanfar Latif**, Sherif E. Abdelhamid, Roxane Elias Mallouhy, Jaafar Alghazo, and Zafar Abbas Kazimi. 2022. Deep Learning Utilization in Agriculture: Detection of Rice Plant Diseases Using an Improved CNN Model. *Plants* 11, no. 17: 2230.

(***ISI Impact Factor: 4.658***).

16. **Ghazanfar Latif**, Morsy, H., Hassan, A., & Alghazo, J. (2022). Novel Coronavirus and Common Pneumonia Detection from CT Scans Using Deep Learning-Based Extracted Features. *Viruses*, *14*(8), 1667.

(***ISI Impact Factor: 5.818***).

17. Butt, M. M., Iskandar, D. N. F., Abdelhamid, S. E., **Ghazanfar Latif**, & Alghazo, R. (2022). Diabetic Retinopathy Detection from Fundus Images of the Eye Using Hybrid Deep Learning Features. *Diagnostics*, *12*(7), 1607.

(***ISI Impact Factor: 3.992***).

18. **Ghazanfar Latif**, Kévin Bouchard, Julien Maitre, Arnaud Louis Abel Back, L. Paul Bédard, Deep Learning–Based Automatic Mineral Grain Segmentation and Recognition, *Minerals*, 2022.

(***ISI Impact Factor: 2.644***).

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78. **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.

79. 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-2018),* Manama Bahrain.

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2010 81. Qurat-Ul-Ain, **Ghazanfar Latif**, Sidra Batool Kazmi, M. Arfan Jaffar, and Anwar M. Mirza, Classification and Segmentation of Brain Tumor using Texture Analysi*s, in International Conference on Artificial Intelligence, Knowledge Engineering and Databases (AIKED 2010)*, University of Cambridge UK Pages: 147-155.

Book Chapters (Total: 7)

2023 82. **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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83. **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 84. **Ghazanfar Latif**, Alghazo, J. M., Maheswar, R., Sampathkumar, A., & Sountharrajan, 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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85. **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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87. 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.

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2019 88. **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: 5)

2023 89. **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, Riyad, Saudi Arabia.

2020 90. 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 91. 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.

92. 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 93. **Ghazanfar Latif**, Dayang Nurfatimah, Automated Brain Tumor Detection, Analysis, and Visualization System, *Innovation & Technology Exposition (InTEX18),* Kuching, Malaysia, 2018.

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	Model Adjustment & Transfer Learning (TensorFlow)	Sep 10, 2021 - Nov 03, 2021	Germany
2	Machine Learning Engineer (Natural Language Processing for Medical Data)	Jun 18, 2021 – Oct 26, 2021	USA
3	LSTM Deep/Machine Learning Project Tone Up	Jul 23, 2021 – Aug 2, 2021	USA
4	Feature Extraction (NLP) using Python	Jun 24, 2021 - Jun 28, 2021	Greece
5	Deep Learning and Image Processing	Aug 23, 2021 - Oct 01, 2021	Japan
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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