

AMIRITA DEWANI

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PROFESSIONAL SUMMARY

Motivated and Award-Winning Academician and Research Scholar with a Ph.D. in Software Engineering and expertise in Artificial Intelligence, Machine Learning, and Natural Language Processing. Currently serving as an Assistant Professor at Mehran University of Engineering and Technology, with proven experience in teaching, research, curriculum design, project supervision and developing AI-driven solutions for societal benefit. Recognized with Excellence Award in Engineering and Technology for outstanding contributions.

WORK EXPERIENCE

ASSISTANT PROFESSOR – PAKISTAN | **Mehran University of Engineering and Technology** | April 2013 – Present

Educating students using globally recognized Outcome Based Education Methodologies, advancing research, and supporting the academic community.

Teaching and Instruction

- Designing and delivering lectures, tutorials, and practical sessions.
- Developing course materials, assignments, and assessments aligned with the curriculum.
- Guiding students in projects, internships, and academic development.
- Using modern pedagogical techniques and technology-enhanced learning tools.

Research and Project Work

- Conducting independent and collaborative research.
- Publishing in peer-reviewed journals, conferences, and academic platforms.
- Seeking research grants and funding opportunities.
- Supervising undergraduate and postgraduate research students.

Academic Advising and Mentorship

- Class Advisor for BSAI: Advising students on academic pathways and career opportunities.
- Providing mentorship to foster critical thinking, creativity, and innovation.

Departmental Services

- Participating in departmental, faculty, and university committees.
- Contributing to curriculum development and program reviews.
- Engaging in community outreach and academic collaborations.
- Developing SAR for program accreditation.
- Generating FYP project proposals.

LECTURER– PAKISTAN | **Mehran University of Engineering and Technology** | February 2009 – March 2013

Effective delivery of knowledge, student engagement, and contribution to the academic environment.

Teaching and Instruction

- Delivering lectures, tutorials, and laboratory sessions across undergraduate courses.
- Preparing lesson plans, instructional materials, and student assessments.
- Using innovative and student-centered and OBE based teaching methods to enhance learning.

Student Support and Guidance

- Providing academic advising and mentorship to students.
- Assisting students with coursework, projects, and career planning.

Research and Scholarly Contribution

- Engaging in research activities and contributing to publications.
- Supporting departmental research projects.

Administrative and Academic Service

- Participating in departmental meetings, academic committees, and student activities.

Professional Development

- Engaging in continuous professional learning and training.
- Keeping up to date with advances in pedagogy and subject expertise.

LAB LECTURER– PAKISTAN | **Mehran University of Engineering and Technology** | June 2008 – Jan 2009

Responsible for conducting practical and laboratory-based teaching, ensuring that students apply theoretical knowledge through hands-on experience.

Laboratory Teaching & Demonstrations

- Conducting lab sessions, demonstrations, and practical classes for undergraduate students.

- Guiding students in the correct use of laboratory equipment, software, and programming techniques.
- Ensuring students gain practical skills aligned with course outcomes.

Curriculum & Lab Development

- Assisting in the design and updating of laboratory manuals, experiments, and practical assignments.
- Aligning laboratory activities with theoretical course content.
- Developing innovative lab-based teaching methods and assessments

Student Supervision & Support

- Supervising students during lab work, projects, and practical examinations.
- Providing academic and technical guidance on experiments.
- Ensuring safe and effective learning practices in the lab environment.

Laboratory Management & Safety

- Overseeing lab facilities, equipment maintenance, and inventory management.
- Implementing and enforcing health, safety, and ethical standards in the lab.

Research & Professional Contribution

- Supporting students in research-based lab work and final-year projects.

Administrative & Academic Duties

- Contributing to departmental activities, academic committees, and quality assurance processes.
- Maintaining accurate records of lab sessions, grades, and student progress.

INTERN UNDER SUPPORT TO SCIENTIF TALENT BY HEC- PAKISTAN| Mehran University of Engineering and Technology |

May 2008 – June 2008

- Partnered with primary instructors in teaching students and assisting faculty members to improve educational outcomes.
- Created syllabus and instructional plans for each class session in accordance with stated course objectives.
- Graded quizzes, tests, homework and projects to provide students with timely academic progress information and feedback.

EDUCATION

- **Doctor of Philosophy (Ph.D.) in Software Engineering | Mehran University of Engineering & Technology, Pakistan – 2018-2025**
 - Postgraduate Scholarship by Mehran University of Engineering & Technology | **Score: 3.92 /4.0 CGPA**
 - Field of Specialization: Artificial Intelligence, machine learning, and Natural Language Processing
- **Master of Engineering (M.E) in Information Technology | Mehran University of Engineering & Technology, Pakistan – 2007-2009**
 - Merit-based Scholarship by Mehran University of Engineering & Technology | **Score: 3.97 /4.0 CGPA**
 - Field of Specialization: Core Software Engineering, Global Software Development Environments.
- **Bachelor of Engineering (B.E) in Software Engineering | Mehran University of Engineering & Technology, Pakistan – 2003-2007**
 - Merit-based Scholarship by Mehran University of Engineering & Technology | **Score: A+ Grade (Distinction) (1st Position holder and Gold Medalist)**

SKILLS & CORE COMPETENCIES

Academic & Teaching Skills

- Instructional Delivery (Teaching various courses at the undergraduate level)
- Curriculum Design & Course Development
- Student Supervision & Mentorship, Final Year Project Supervision
- Academic/Scholarly Writing & Research Publications
- Conference Presentations & Workshops
- Self-Assessment Report Preparation for Program Accreditation
- Outcome-Based Education (OBE) Methodologies

Research & Analytical Skills

- Artificial Intelligence
- Machine Learning & Deep Learning
- Natural Language Processing (typically for Low-resource languages)
- Social Network Analysis
- Data Preprocessing Techniques
- Generative AI
- Large Language Models
- RAG Techniques

Technical Skills

- Programming Languages: Python, Java, C++, etc.
- Libraries & Frameworks: TensorFlow, PyTorch, Scikit-learn, Keras, NLTK, Hugging Face
- Databases: MySQL, MongoDB, PostgreSQL

- Tools: Git, Jupyter, Google Colab among many others

Professional & Soft Skills

- Collaborative Working with diverse Research Groups
- Team Leadership Skills
- Resource Management Skills learned through different research projects.
- Professional, Interpersonal and Communication skills
- Project Management
- Critical Thinking & Problem Solving
- Communication & Presentation
- Time Management skills and many more.

TOOLS

Machine Learning & AI Tools (TensorFlow, PyTorch, Scikit-learn, Keras, Hugging Face Transformers, OpenAI APIs, Groq, Gradio, Streamlit, Jupyter Notebook, Google Colab, and so on) | Data Science & Analytics Tools (Pandas, NumPy, Matplotlib, Seaborn, NLTK, SpaCy, Sentence Transformers) | Databases (MySQL, Po, SQLite, MongoDB, Firebase, Vector Databases, FAISS, Big Data Tool (Microsoft Azure) | Version Control & Collaboration (Git, GitHub) | Other Useful Tools (VS Code, PyCharm) and many more.

TRAININGS AND CERTIFICATIONS

- Completed Gen AI for University Faculty & Leaders Crash Course, conducted by INNOVNETURES Global, Sept 2025
- Generative AI Application Developer Certification conducted by Pak Angels, Aug 2025 (*Honored with Top Performer Award*)
- Project Presentation in Health Innovation: "Virtual Speech Therapist for Aphasia Patients with Multilingual Regional Dialects" at Dow University of Health Sciences (DUHS), Feb 2025
- Training on Understanding Blockchain: History, Careers and Azure Integration by Microsoft Learn Student Ambassadors, Sep 2024
- Online Guided Project: Build a Data Science Web App with Streamlit and Python, Completed on Coursera, June 2024.
- Training on Fine Tune BERT for Text Classification with TensorFlow, Completed on Coursera June 2024.
- Training on Promoting Research Excellence in Academics across Pakistan Conducted by HEC, Pakistan, Aug 2022.
- Project Presentation in Health Innovation: "An Artificial Intelligence based Smart Mobile App to Promote Dental Health by Professional Monitoring", Dec 2021.
- And many more.

AWARDS, ACHIEVEMENTS AND EXTRACURRICULAR ACTIVITIES

- Award of Excellence in the field of Engineering and Technology awarded in Star Awards by SAP at Islamabad Pakistan.
- Honored with highest student feedback for course evaluation.
- Scholarship by Mehran UET, for securing 1st Position throughout all 4 years during undergraduate studies.
- Awarded with Gold Medal and recognized as the Best Graduate in undergraduate studies at Mehran University of Engineering and Technology.
- Top Performer Award in Generative AI Application Developer Training by PakAngels and Aspire Pakistan.
- Honored with Special Prize and 1st position in DUHS-DICE Health Innovation Competition organized by DUHS, Karachi.
- Honored with Support to Scientific Talent Scholarship based on Meritorious Academic Performance by Higher Education Commission of Pakistan.
- Award of Scholarship under Endowment scheme on Merit basis for pursuing Master of Engineering at Mehran University of Engineering and Technology.
- Award of Scholarship under MUET Funds for Postgraduates on Merit basis for pursuing Doctor of Philosophy Degree at Mehran University of Engineering and Technology.
- And many more.

PUBLICATIONS

1. Muzaffar, A., Manahil, A., Dewani, A., Sami, M., Kumari, V., & Agha, D. (2025). An Augmented Reality Application for eLearning: Design of Stellar Escape Prototype for Immersive Space Exploration. *Sukkur IBA Journal of Emerging Technologies*, 8(1), 79-98.
2. Hassan, S., Rind, T., Dewani, A., & Sami, M. (2025). Management of Speech Impairment Disorders in Aphasia Patients using Digital intervention with Multilingual Regional Dialects . *International Journal of Innovations in Science & Technology*, 7(1), 111-128.
3. Sami, M., Agha, D., Baloch, J., Dewani, A., & Maheshwari, K. D. (2024). Efficient Object Detection and Voice-Assisted Navigation for the Visually Impaired: The Smart Hat Approach. *Sukkur IBA Journal of Computing and Mathematical Sciences*, 8(2), 1-12.
4. Riaz, A., Memon, M. A., Dewani, A., Bhatti, S., Naeem, F., & Sami, M. (2024). Topic Modeling and Identification in a Resource-Scarce Roman Urdu Language. *KIET Journal of Computing and Information Sciences*, 7(2), 60-83.
5. Azam, F., Sami, M., Agro, M., & Dewani, A. (2024). Analyzing the Shadows: Machine Learning Approaches for Depression Detection on Twitter. *International Journal of Innovations in Science & Technology*, 6(3), 1402-1416.
6. Mangrio, I. K., Dewani, A., Meghji, A. F., & Bhatti, S. (2023). Agent-based Modeling of COVID-19: A case study of Hyderabad city. *VFAST Transactions on Software Engineering*, 11(1), 76-84.

7. Dewani, A., Memon, M. A., Bhatti, S., Sulaiman, A., Hamdi, M., Alshahrani, H., ... & Shaikh, A. (2023). Detection of cyberbullying patterns in low resource colloquial Roman Urdu microtext using natural language processing, machine learning, and ensemble techniques. *Applied Sciences*, 13(4), 2062.
8. Fazila Baloch, Sania Bhatti and Amirita Dewani., "Application of Process Mining in Education: A Case Study". *Acta Scientific Computer Sciences* 4.7 (2022): 03-11.
9. Dewani, A., Bhatti, S., & Memon, M. A. (2022). Analysis of Outcome-based educational model in Engineering Education with preliminary Findings. *International Journal of Advanced Culture Technology*, 10(1), 1-9.
10. Dewani, A., Memon, M. A., & Bhatti, S. (2021). Cyberbullying detection: advanced preprocessing techniques & deep learning architecture for Roman Urdu data. *Journal of big data*, 8(1), 160.
11. Qureshi, H. A., Dewani, A., Arain, M. U., Sami, M., Dewani, N., & Rasheed, M. (2021, April). Diabetes Mellitus Type-2 Web-based Risk-Prediction System Using Predictive Analytics & Optimal Features–A Case Study of LUMHS, Jamshoro. In *2021 International Conference on Artificial Intelligence (ICAI)* (pp. 9-15). IEEE.
12. Azam, F., Agro, M., Sami, M., Abro, M. H., & Dewani, A. (2021, April). Identifying depression among twitter users using sentiment analysis. In *2021 international conference on artificial intelligence (ICAI)* (pp. 44-49).
13. Dewani, A., Memon, M. A., & Bhatti, S. (2021). Development of computational linguistic resources for automated detection of textual cyberbullying threats in Roman Urdu language. *3 c TIC: cuadernos de desarrollo aplicados a las TIC*, 10(2), 101-121.
14. Dewani, A., Lakho, M. R., Buledi, G. H., Samoo, U., Anwer, N., Latif, M., & Shaikh, A. (2020, January). DemCure: a technology-oriented solution for assisting caretakers and dementia patients with mild cognitive impairment. In *2020 3rd International Conference on Computing, Mathematics and Engineering Technologies (iCoMET)* (pp. 1-7). IEEE.
15. Baloch, J., Sami, M., Memon, M., Dewani, A. (2019, June). An Efficient Approach for Predicting Shortest Path to Travel over Road Traffic In 2019 14th Asia Pacific International Conference on Information Science and Technology (APIC-IST 2019), Beijing, China
16. Bhatti, S., Dewani, A., Maqbool, S., & Memon, M. A. (2019). A web-based approach for teaching and learning programming concepts at middle school level. *International Journal of Modern Education and Computer Science*, 11(4), 46-53.
17. Dewani, A., Bhatti, S., Memon, M. A., Arif, W. A., Arain, Q., & Zehra, S. B. (2018). Sign Language e-Learning system for hearing-impaired community of Pakistan. *International Journal of Information Technology*, 10(2), 225-232.
18. Dharani, K., Bhatti, S., Dewani, A., Rajput, E., & Ayaz, A. (2018, March). Renovate-It: A geo-based technical professional hiring system for repairing and maintenance services. In *2018 International Conference on Computing, Mathematics and Engineering Technologies (iCoMET)* (pp. 1-9). IEEE.
19. Bhatti, S., Dewani, A., Hafiz, T., Noor, P., & Memon, M. G. (2018, February). Management of non-behavioral tasks via auto reminder and notifier. In *2018 International Conference on Advancements in Computational Sciences (ICACS)* (pp. 1-6). IEEE.
20. Dewani, A., Bhatti, S., Memon, P., Kumari, V., Arain, A., & Jiskani, A. (2018). Keyless smart home: an application of home security and automation. *Oriental Journal of Computer Science and Technology*, 11(2), 107-114.
21. Memon, P., Dewani, A., Bhatti, S., & Hafiz, T. (2018). Scrutinizing automated load testing via blazemeter, apache jmeter and hp loadrunner. *International Journal of Advanced Studies in Computers, Science and Engineering*, 7(3), 35-42.