

Adeer Khan

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EDUCATION

- **Korea Advanced Institute of Science and Technology (KAIST)** Feb 2024 - Aug 2025
MSc in Civil and Environmental Engineering
◦ CGPA: 3.50/4.30 (92/100 %)
Daejeon, South Korea
- **Capital University of Science and Technology (CUST)** Sep 2018 - Jul 2022
B.Sc. Civil Engineering
◦ CGPA: 3.88/4.00 (Gold Medalist)
Islamabad, Pakistan

RESEARCH INTERESTS

- Application of generative AI for automated design and optimization in the AEC industry.
- Leveraging large language models (LLMs) for intelligent digital twin management, adaptive control, and human-AI collaboration in architecture.

PUBLICATIONS

- [J.1] Khan, A., Chang, S., & Chang, H. (2025). **Generative AI approaches for architectural design automation.** *Automation in Construction*, 180, 106506. (IF = 11.5).
- [J.2] Lee, C.-S., Khan, A., Chang, S., & Chang, H. (2025). **Neural Network Coding Layer (NNCL): Enhancing Deep Learning Robustness against Feature Erasure.** *IEEE Access* (IF = 3.6).
- [J.3] Khan, A., & Sudheer, M. (2022). **Machine learning-based monitoring and modeling for spatio-temporal urban growth of Islamabad.** *The Egyptian Journal of Remote Sensing and Space Science*, 25(2), 541–550 (IF = 4.1).

RESEARCH EXPERIENCE

- **Research Assistant - KAIST** Feb 2024 - Oct 2025
LLM integrated Digital Twin Development
◦ Implementing an LLM-assisted digital twin framework in Unity 3D, integrating IoT hardware (Arduino, ESP32) for intelligent building system simulation and control.
◦ Responsible for managing the lab server and website, and maintaining the lab's IT infrastructure.
Daejeon, South Korea

SKILLS

- **Languages:** Python, TypeScript, C#
- **Data & GIS:** QGIS, pandas, NumPy, scikit-learn
- **Frontend:** React, Zustand, Three.js
- **CAD & BIM:** AutoCAD, SketchUp, Speckle
- **Video & 3D:** CapCut, Blender, Unity3D
- **AI & Agents:** Cursor, OpenCode, Hermes, ComfyUI
- **Backend & Ops:** FastAPI, Docker, AWS, Linux, Cloudflare, SQLite, CI/CD

PROFESSIONAL EXPERIENCE

- **NeoBim AI GmbH** Oct 2023 - Present
AI Research Engineer
◦ Designing AI-driven architectural workflows that automate spatial planning, BIM generation, and design reasoning. <https://designer.bluebrick.ai/>
◦ Engaged in technical implementation of end-to-end ML pipelines connecting frontend interfaces to AWS-hosted model backends, including dataset preparation, API development, and deployment architecture.
◦ Evaluated 50+ generative AI repositories and finetuned models (Stable Diffusion, Flux, Mistral, Qwen, LLaMA) for scalable, domain-specific AEC design automation.
Germany (Remote)

COURSES & CERTIFICATIONS

- **Machine Learning Specialization** Stanford University
- **Introduction to Computer Vision and Image Processing** IBM
- **Imagery, Automation, and Applications** UC Davis
- **Introduction to Software Engineering** IBM
- **Introduction to DevOps** IBM
- **ML Summer School 2026** Cohere Labs