



# Syed Muhammad Atif

ASSISTANT PROFESSOR · COMPUTER SCIENCE & SOFTWARE ENGINEERING

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Syed Muhammad Atif

*"Research is to see what everybody else has seen, and to think what nobody else has thought."*  
**Albert Szent-Gyorgyi**

## Summary

With a background in computer science and software engineering, I am currently an Assistant Professor at the Ziauddin University in Karachi, Pakistan. Prior to joining Ziauddin University, I held the position of Senior AI Developer at HetroCloud, a research project funded by the National Center of Big Data and Cloud Computing (NCBC) that was executed at the Karachi Institute of Economics and Technology (KIET). My expertise in machine learning and computer vision spans over five years, and I have contributed to several peer-reviewed articles published in renowned conferences and journals such as Elsevier Pattern Recognition Letters, Elsevier Computer Networks, Springer Neural Processing Letters, IEEE Access, KSII Transactions on Internet and Information Systems, and IEEE TENCON. In 2017, I received the HEC Indigenous Ph.D. Fellowship in recognition of my academic achievements to pursue doctoral studies. My research interests lie in computer vision, deep learning, radial basis function neural networks, nonnegative matrix factorization and network tomography. Additionally, I have served as a reviewer for the Elsevier journal Results in Control and Optimization

## Work Experience

### Department of Computer Science & Software Engineering, Ziauddin University

Karachi, Pakistan

ASSISTANT PROFESSOR

Jan. 2023 - to date

- On the research front, my activities involve writing research grants, conducting research leading to publications, and actively participating in ongoing research funded projects.
- In terms of academics, my responsibilities include delivering lectures to undergraduate students and evaluating their performance in respective courses. Additionally, I serve as the secretary of the Departmental Academic Review Committee (DARC), which oversees curriculum revisions and monitors the academic progress of students.
- On the administrative side, I hold positions as either the head or a member of various committees, including the Departmental Examination Committee, FYP Committee, Board of Studies, and Board of Faculty

### NCBC, HEC, Pakistan under funded project "Hetro Cloud" in KIET.

Karachi, Pakistan

SENIOR DEVELOPER AI

Jan. 2021 - Dec. 2022.

- During my tenure, I am the Senior Developer AI leading a team in the creation of a cloud-deployed, scalable face recognition software.
- Our project, tailored for the requirements of the hosting institute KIET, involves designing a facial recognition system.
- The frontend includes a Flutter-based mobile application and a Flask-based web application.
- The software backend, developed in Python, incorporates essential deep learning libraries such as RetinaFace, MTCNN, and FAISS.
- MySQL serves as the engine for data storage.

### Steps Ahead Pvt. Ltd.

Karachi, Pakistan

WEB DEVELOPER

May. 2019 - Oct. 2020

- I developed a web-based, real-time, and highly dynamic asset census system, which serves multiple purposes and is seamlessly integrated with an Android application dedicated to conducting asset census. Additionally, a web-based reporting tool is incorporated into this system to analyze census results from various business perspectives.
- I also designed and implemented a web-based damage control and management system. This application, integrated with an Android counterpart, is focused on business damage monitoring and control, providing an effective solution for mitigating and managing damages.

### Department of Electrical Engineering, PAF Karachi Institute of Economics & Technology.

Karachi, Pakistan

RESEARCH/TEACHING ASSISTANT

Aug. 2018 - Apr. 2019

- Support the Head of the Electrical Engineering Department in the role of a teaching assistant.
- My responsibilities include reviewing assignments and quizzes.
- Additionally, serve as a guest speaker in MS/PhD classes and contribute to research activities within the "Network Tomography Lab," led by Dr. Sameer Qazi, the Head of Electrical Engineering.
- This involvement resulted in the successful publication of research papers in IEEE conferences and journals with ISI impact factors.

### Department of Computing and Technology, Indus University.

Karachi, Pakistan

LECTURER

Feb. 2016 - Feb. 2018

- Deliver lectures, assess assignments, mid-term and final papers.
- Oversee Final Year Projects and provide guidance.
- Additionally, supervise a Final Year Project titled "Raspberry Pi3 based Wifi Router," funded by ICT FYP.

## Honors & Awards

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2016	<b>Secure</b> , Scholarship of HEC under Indigenous PhD. Fellowship Program	Islamabad, Pakistan
2016	<b>First Place</b> , Clear Entry Test for PAF-KIET PhD student with 89%	PAF-KIET, Karachi, Pakistan
2011	<b>Second Place (Silver medalist)</b> , MS Program, UIT	Karachi, Pakistan

## Education

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### PAF-KIET (Karachi Institute of Economics & Technology)

PH.D. IN COMPUTER SCIENCE

- Under HEC Indigenous PhD Fellowship program.

Karachi, Pakistan

Jan 2017 - Feb. 2022

### UIT (Usman Institute of Technology/Hamdard University)

M.S. IN COMPUTER NETWORKS & COMMUNICATION

- Silver medalist in his batch.

Karachi, Pakistan

Dec. 2007 - Mar. 2010

### SSUET (Sir Syed University of Engineering and Technology)

B.S. IN COMPUTER ENGINEERING

Karachi, Pakistan

Jan. 2001- Mar. 2005

## Publications

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### PEER REVIEWED JOURNAL PAPERS

- [1] **Atif, Syed Muhammad**, Shujaat Khan, Imran Naseem, Roberto Togneri, and Mohammed Bennamoun. "Multi-kernel fusion for RBF neural networks." *Neural Processing Letters* 55, no. 2 (2023): 1045-1069. [online]
- [2] **Atif, Syed Muhammad**, Nicolas Gillis, Sameer Qazi, and Imran Naseem. "Structured nonnegative matrix factorization for traffic flow estimation of large cloud networks." *Computer Networks* 201 (2021): 108564. [online]
- [3] Qazi, Sameer, Farah Sabir, Bilal A. Khawaja, **Atif, Syed Muhammad**, and Muhammad Mustaqim. "Why is internet of autonomous vehicles not as plug and play as we think? Lessons to be learnt from present internet and future directions." *IEEE Access* 8 (2020): 133015-133033. [online]
- [4] Naveed, Muhammad, Sameer Qazi, **Atif, Syed Muhammad**, Bilal A. Khawaja, and Muhammad Mustaqim. "SCRAS server-based crosslayer rate-adaptive video streaming over 4G-LTE for UAV-based surveillance applications." *Electronics* 8, no. 8 (2019): 910. [online]
- [5] **Atif, Syed Muhammad**, Sameer Qazi, and Nicolas Gillis. "Improved SVD-based initialization for nonnegative matrix factorization using low-rank correction." *Pattern Recognition Letters* 122 (2019): 53-59. [online]
- [6] Qazi, Sameer, **Atif, Syed Muhammad**, and Muhammad Bilal Kadri. "A novel compressed sensing technique for traffic matrix estimation of software defined cloud networks." *KSII Transactions on Internet and Information Systems*, vol. 12, no. 10, pp. 4678-4702, 2018. DOI: 10.3837/tiis.2018.10.004. [online]

### CONFERENCE PROCEEDINGS

- [1] Memon, Rashida A., **Atif, Syed Muhammad**, and Sameer Qazi. "First Elephants then Mice: A Two-stage Robust Estimation Technique for Traffic Matrix in Large Cloud Networks in Presence of Over Dispersion." In *TENCON 2018-2018 IEEE Region 10 Conference*, pp. 1301-1306. IEEE, 2018. [online]