Yawar Rehman

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Education

- M.S. leading to PhD (Electronics and Communication Engineering) - **3.77 / 4.00 CGPA**
  Hanyang University, Republic of Korea (2012 - 2017)
- M.S. (Telecommunication Engineering) - **3.82 / 4.00 CGPA**
  Hamdard University, Karachi, Pakistan (2009 – 2011)
- B.E. (Electronics Engineering) – **3.46 / 4.00 CGPA**
  Mehran University of Engineering & Technology, Karachi, Pakistan (2004 – 2008)

Area of Specialization / Research Interests

Computer vision; Image Processing; Deep Learning; Object detection and classification; 3D Point Cloud Classification

Awards, Honors, and Services

- ***Technical Reviewer*** of IET Image Processing, IET Intelligent Transport Systems, and Higher Education of Pakistan Technical Grant Proposal reviewer 2021.
- ***Research Grants of USD $130,000*** by Higher Education Commission (Pakistan) under the SRGP, NRPU, and TDF grants for the period 2018 to 2021.
- ***Session Chair*** at International Conference on Emerging Trends in Telecommunication & Electronic Engineering for the Session on Signal Processing, NEDUET, 2018.
- ***Best Research Paper Award***, Conference on Patterns, France, 2015.
- ***MS leading to PhD Scholarship*** by Higher Education Commission (Pakistan) to Hanyang University, Republic of Korea, 2012.
- ***Travel Grant*** from Higher Education Commission (Pakistan) to Malaysia for Paper Presentation in IEEE Symposium on Industrial Electronics & Applications – ISIEA 2011.

Research Projects (03 selected projects as PI / Co-PI)

- **Title:** Object detection with occlusion handling
- **My Role:** Principal Investigator
- **Project Type:** Research Project
- **Funding:** USD $2,681/-
- **Duration:** Jan. 2019 – Feb. 2021 (Completed)
- **Funding Organization:** Higher Education Commission Pakistan

- **Title:** 3D scanning of industrial objects for quality assurance and rapid prototyping
- **My Role:** Principal Investigator
- **Project Type:** Research Project
- **Funding:** USD $40,000/-
- **Duration:** Aug. 2018 – June 2021 (Completed; In Final Process)
- **Funding Organization:** Higher Education Commission Pakistan

- **Title:** Digital surveying and modeling of building and surroundings using hand held laser scanners
- **My Role:** Co-Principal Investigator

- **Project Type:** Technology Development
- **Funding:** USD $88,000/-
- **Duration:** Aug. 2018 – Feb. 2021 (Completed)
- **Funding Organization:** Higher Education Commission Pakistan

Professional + Research Experience (09 + 04 Years)

- **Duration:** 4 Year **(**Oct 2017 – Present)
- **Designation:** Assistant Professor
- **Place:** NED University of Engineering & Technology, Karachi
- **Courses Being Taught in Undergraduate:** Programming Languages; Digital Image Processing
- **Courses Being Taught in Graduate Program:** Advance Neural Networks and Fuzzy Logic; Deep Learning

- **Duration:** 1 Year (Jan 2016 – Jan 2017)
- **Designation:** Researcher
- **Place:** Hanyang University, Republic of Korea
- **Company:** NRF funded project

- **Duration:** 8 Month (Feb2015 – Sep2015)
- **Designation:** Researcher
- **Place:** Hanyang University, Republic of Korea
- **Company:** Hyundai MnSoft funded project

- **Duration:** 2 Year (Jan 2013 – Jan 2015)
- **Designation:** Researcher
- **Place:** Hanyang University, Republic of Korea
- **Company:** NRF funded project

- **Duration:** 7 Year 9 Months (Dec 2009 – Sep 2017)
- **Designation:** Lecturer
- **Place:** NED University of Engineering & Technology, Karachi
- **Courses Taught (Undergraduate):** Electronics

- **Duration:** 1 Year 4 Months (Sep 2008 – Dec 2009)
- **Designation:** Lab Engineer/ Jr. Lecturer
- **Place:** Faculty of Engineering Sciences & Technology (FEST), Hamdard University, Karachi
- **Courses Taught (Undergraduate):** Measurement & Instruments; Control System-I

Graduate Thesis Supervision (09 selected thesis)

Sno	Year	Total Students	Major
01	2018-19	02	Machine learning and CNN
02	2019-20	01	CNN
03	2020-21	04	CNN
04	2021-2022	02	CNN

Publications (10 SCI / SCIE / JCR indexed publications)

2022

Journal

- **Y. Rehman**, H. Amanullah, M. A. Shirazi and M. Y. Kim, "Small Traffic Sign Detection in Big Images: Searching Needle in a Hay," in *IEEE Access*, vol. 10, pp. 18667-18680, 2022, doi:

10.1109/ACCESS.2022.3150882. **(JCR)**

2021

Journal

- D. M. S. Bhatti, ***Y. Rehman***, et al.: "Machine learning based cluster formation in vehicular communication", Telecommunication Systems (2021), Springer, https://doi.org/10.1007/s11235-021-00798-7 **(JCR)**
- S. R. N. Jafri, ***Y. Rehman***, et al.: "Development of georeferenced 3D point cloud in GPS denied environments using backpack laser scanning system", Elektronika ir Elektrotechnika (2021), http://dx.doi.org/10.5755/j02.eie.29063 **(JCR)**
- ***Y. Rehman***, H. Amanullah, et al.: "Detection of small size traffic signs using regressive anchor box selection and DBL layer tweaking in YOLOv3", Applied Sciences, MDPI (2021), https://doi.org/10.3390/app112311555 **(JCR)**

Conference

- T. H. M. Siddique, ***Y. Rehman***, et al.: "3D object localization using 2D estimates for computer vision applications", IEEE MAJICC 2021, Pakistan.

2020

Journal

- J.A. Khan, Y. Chen, ***Y. Rehman***, and H Shin: "Performance enhancement techniques for traffic sign recognition using a deep neural network", Multimedia Tools and Application, Springer, 79 (29), 2020 **(JCR)**
- S. A. Haider, ***Y. Rehman***, and S. M. Ali: "Enhanced multimodal biometric recognition based upon intrinsic hand biometrics", Electronics, MDPI, 9(11), 2020 **(JCR)**

2019

Conference

- ***Y. Rehman***, H. M. Ameem Uddin, T. H. Masood, et al: "Comparison of camera based and laser scanner based 3D point cloud", *IEEE ICETEST* 2019, Pakistan.

2018

Journal

- ***Y. Rehman***, J. Khan, and H. Shin: "Efficient coarser-to-fine holistic traffic sign detection for occlusion handling", *IET Image Processing*, 12 (12), 2018. **(JCR)**

2017

Journal

- ***Y. Rehman***, I. Riaz, X. Fan, and H. Shin: "D-patches: effective traffic sign detection with occlusion handling", *IET Computer Vision*, 11 (5), 2017. **(JCR)**

2016

Journal

- Riaz, T. Yu, ***Y. Rehman***, and H. Shin: "Single image dehazing via reliability guided fusion", *Elsevier Journal of Visual Communication and Image Representation*, 40(A), 2016. **(JCR)**
- X. Fan, I. Riaz, ***Y. Rehman***, and H. Shin: "Vanishing point detection using random forest and patch-wise weighted soft voting", *IET Image Processing*, 10 (11), 2016. **(JCR)**

Conference

- ***Y. Rehman***, J. Khan, I. Riaz, and H. Shin: "Chunks: The remedy for notorious false alarms in

pedestrian detection", *IEEE ICEIC* 2016*,* Vietnam.

2015

Journal

- ***Y. Rehman***, I. Riaz, F. Xue, Park, J. Khan and H. Shin: "Pedestrian detection with cascaded part model for occlusion handling", *International Journal on Advances in Intelligent Systems*, pp: 426-436, December 2015.

Conference

- ***Y. Rehman***, I. Riaz, X. Fan, Piao. J, J. Khan, and H. Shin: "Pedestrian detection with occlusion handling", *Patterns* 2015, France. **(Best paper award)**

- X. Fan, C. Deng, ***Y. Rehman***, and H. Shin: "Fast road vanishing point detection based on modified adaptive soft voting", *Patterns* 2015, France.

Other Publications

- ***Y. Rehman***, G. B. Narejo and S. Zaidi: "An experiment for testing efficiency of effective teaching model and comprehensive use of limited resources", *Proceedings of IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE)* 2012, Hong Kong.

- ***Y. Rehman*** and F. Azim: "Comparison of different artificial neural networks for brain tumor classification via magnetic resonance images", *UKSim 14th IEEE International Conference on Mathematical/Analytical Modelling and Computer Simulation* 2012*,* Cambridge University England.

References

Shall be provided upon requested please.