

# Md Imran Hosen

ACADEMICIAN · RESEARCHER · AI & COMPUTER VISION EXPERT

Aksemsettin Mah., Adnan Khaverci Sok, 6/3, Fatih, Istanbul, Turkey

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## Education

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### Bahcesehir University

Istanbul, Turkey

PH.D. IN COMPUTER ENGINEERING (AREA: COMPUTER VISION)

Oct. 2020 - Jun. 2024

Thesis Title: Efficient Human Parsing and Inpainting Using Advanced Deep Learning Techniques

Advisor: Dr. Tarkan Aydin

### Jahangirnagar University

Dhaka, Bangladesh

MS, COMPUTER SCIENCE AND ENGINEERING

Sep. 2017 - Oct. 2018

Dissertation Title: A study of AP Aggregation Algorithm with Host Mobility and Implementation on Raspberry Pi 3 and Banana Pi Pro

### Jahangirnagar University

Dhaka, Bangladesh

BS COMPUTER SCIENCE AND ENGINEERING

Dec. 2012 - Nov. 2016

Final Year Project: Detection of Fruits Defects Using Colour Segmentation Technique

## Working Experience

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### Bahcesehir University

Istanbul, Turkey

ASSIST. PROF.

Nov. 2025 - Continue

### Istanbul Ticaret University

Istanbul, Turkey

LECTURER

Sep. 2024 - Aug. 2025

- Delivered undergraduate and graduate-level courses in Computer Engineering and Software Engineering department, focusing on practical applications and conceptual understanding.
- Designed and implemented curriculum materials aligned with current industry trends and academic standards.
- Fostered interactive and inclusive learning environments that encouraged critical thinking, creativity, and student participation.
- Supervised over 10 undergraduate student final projects, providing guidance through research design, implementation, and presentation phases.
- Currently supervising 3+ M.Sc. thesis in computer vision and related fields.
- Advised students on academic planning, research opportunities, and career development.
- Served as a jury member for M.Sc. and Ph.D. thesis defenses, contributing to academic evaluation and quality assurance.
- Integrated multimedia tools and advanced learning technologies to enhance instructional delivery and student engagement.
- Participated in academic symposiums and contributed to the university's research initiatives.
- Actively involved as an organizing committee member for international conferences, including IPTA 2025.

### Bahcesehir University

Istanbul, Turkey

RESEARCH ASSISTANT (PROJECT FUNDED BY TÜBİTAK)

Mar. 2021 - Dec. 2023

- Created a framework for real-time multi-human parsing and detection.
- Designed an object detection model optimized for edge devices.
- Developed a system to forecast Parkinson's Disease wearing-off.
- Predicted heatstroke risk using machine learning and physiological data, with early warning capabilities.
- Developed a face inpainting system.
- Implemented emotion, age, and gender prediction via face inpainting.
- Created a hybrid masked face recognition system using inpainting.
- Developed feature matcher for real-time video stitching.

## Manarat International University

### LECTURER, DEPT. OF COMPUTER SCIENCE AND ENGINEERING

Dhaka, Bangladesh

May. 2018 - Sep. 2020

- Designed and delivered engaging lectures, enhancing student engagement and learning outcomes.
- Fostered open classroom discussions, promoting critical thinking and problem-solving skills.
- Promoted and implemented alternative learning methods.
- Conducted independent research and presented at symposiums.
- Planned, developed, and revised curriculum materials, ensuring alignment with current industry standards.
- Supervised 5+ student projects and thesis, guiding students to successful project completions.
- Utilized advanced technology and multimedia tools to enrich the learning experience.
- Advised students on academic and career paths.

## Manarat International University

### INSTRUCTOR (ADJUNCT), DEPT. OF COMPUTER SCIENCE AND ENGINEERING

Dhaka, Bangladesh

May. 2017 - Apr. 2018

- Assisted in designing and delivering lectures to undergraduate students.
- Provided support and guidance for programming assignments.
- Mentored students in implementing hands-on IoT projects.
- Facilitated laboratory sessions and practical demonstrations.
- Graded assignments and exams, providing constructive feedback.

## Research Interest

- Image Processing
- AI/ML/DL
- Computer Vision
- Generative AI (LLM, VLM)
- Human Computer Interaction

## Programming Skills/Tools

- C/C++
- Python
- LangChain
- Agentic AI
- Hugging Face
- PyTorch/TensorFlow/Keras

## Awards and Fellowships

<b>"Funding Programme: 3501 - Kariyer (Project Number: 124E099)"</b> , Support Unit: Academic Research Funding Programmes Directorate (ARDEB)	2025
<b>1st Place on "Forecasting Wearing-Off in Parkinson's Disease"</b> , Activity and Behavior Computing, Germany	2023
<b>Performance-Based Scholarships</b> , TUBITAK: The Scientific and Technological Research Council of Turkey	2023
<b>Best Paper Award (Nominated)</b> , ISPACS: International Symposium on Intelligent Signal Processing and Communication Systems, Penang, Malaysia	2022
<b>Graduate Research Fellowship</b> , TUBITAK: The Scientific and Technological Research Council of Turkey	2020
<b>University Merit Scholarship</b> , Jahangirnagar University, Dhaka, Bangladesh	2017

## Teaching Modules/Subjects

- Data Structures, Spring 2018, Spring 2025
- Programming Languages, Spring 2025
- Network Security, Spring 2025
- Computer Network Architectures (M.Sc.), Spring 2025
- Computer Networks, Summer 2020, Spring 2019, Spring 2018, Fall 2024
- Data Communication, Summer 2018, Fall 2024
- Artificial Neural Networks (M.Sc.), Fall 2024
- Theory of Computing, Fall 2020, Spring 2019,
- Operating System, Fall 2020, Summer 2019, Summer 2018, Summer 2017
- Management Information System, Fall 2020, Fall 2019, Fall 2018
- Algorithm Analysis, Summer 2020, Summer 2019
- Assembly Language, Summer 2020, Fall 2019
- Embedded System Design, Summer 2018
- Digital Image Processing and Pattern Recognition, Fall 2018, Fall 2019

- Computer Organization and Architecture, Fall 2018
- Structured Programming Language, Fall 2017
- Object Oriented Programming, Fall 2017

## Students Supervision (Undergraduate)

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- **Zeynep Bilge ÖZKA**, A Content-Based and Hybrid Music Recommendation System Using the KNN, 2025
- **İlayda Aydoğan** and **Süeda Yaman**, Real-time Emotion Detection Using Deep Learning, 2025
- **Ali Tolga Paçacı**, Music Generation using Long Short-Term Memory (LSTM), 2025
- **Umut Alp Öztürk**, Vision Based Optical Form Reader, 2025
- **Ahmet Mücahit ŞAFAK**, The Language Model Journey of JoyBot, 2025
- **Raisa Akter**, Classification of Medicinal Plant Image Using Convolutional Neural Network, 2020
- **Shamsul Arifin** and **KH Rakibul Islam**, AI Development Through Visual Scripting, 2020
- **MD. Jobayer Alam**, **Najmus Shakib Shaon** and **Minhajul Abedin**, Digital Platform for Teachers & Students, 2020
- **Lameya Islam** and **Sahira Salam**, Voice Recognition using Machine Learning & the results comparison, 2020

## Publications

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### PUBLISHED/ACCEPTED

- Hosen, M.I.**, Aydin, T., Islam, M.B., "End-to-end human parsing and detection optimized for resource-constrained devices." Scientific Reports (2025).
- Cakiral, S., **Hosen, M.I.**, Aydin, T., Comparative Analysis of U-Net and ResNet for Manga Colorization: Consistency, Detail, and Computational Trade-offs, Firat University Journal of Experimental and Computational Engineering, 2026.
- Hosen, M.I.**, Gulcu, A., End-to-End Microexpression Detection Using 3D Convolution and LSTM, IEEE International Conference on Image Processing Theory, Tools and Applications (IPTA 2025), October 13-16, 2025, Istanbul, Turkey.
- Yeh, F., **Hosen, M.I.**, Merve, F., Deep Learning Based Students Activity Tracking, IEEE International Conference on Image Processing Theory, Tools and Applications (IPTA 2025) October 13-16, 2025, Istanbul, Turkey.
- Hosen, M.I.** and Kahraman, S., Deep Learning-Based Efficient Drone Detection and Tracking in Real-Time, IEEE Conference on Signal Processing and Communications Applications (SIU 2025), June 25-28, 2025, Istanbul, Turkey.
- Hosen, M.I.**, AI-Based Automated Censorship of Inappropriate Visual Content for Young Bangladeshi Children, International Conference on Bangladesh Studies (ICBS-I), April 19–20, 2025, Istanbul, Turkey.
- Hosen, M.I.** and Aydin, T., Edge Devices Friendly Multi-Human Parsing with Lightweight Encoding and Multi-Scale Self-Attention Based Decoding, Multimedia Tools and Application, 1-21 (2024), <https://doi.org/10.1007/s11042-024-20094-1>.
- Hosen, M.I.**, Aydin, T., Islam, M.B., WNet: A Dual-Encoded Multi-Human Parsing Network, IET Image Processing, 1–13 (2024). <https://doi.org/10.1049/ipr2.13176>.
- Hosen, M.I.**, and Islam, M.B., Forecasting Wearing-Off in Parkinson's Disease: An Ensemble Learning Approach Using Wearable Data, The 5th International Conference on Activity and Behavior Computing (ABC 2023), September 7-9, Kaiserslautern, Germany (**Secured 1st Place**).
- Hosen, M.I.**, and Islam, M.B., Predicting Heatstroke Risk and Preventing Health Complications Using Machine Learning and Physiological Data, The 5th International Conference on Activity and Behavior Computing (ABC 2023), September 7-9, Kaiserslautern, Germany.
- Imani, H., **Hosen, M.I.**, Feryad, V., and Akyol, A. Efficient Object Detection Model for Edge Devices. In International Conference on Advanced Engineering, Technology and Applications (ICAETA, 2023) (pp. 83-94). Cham: Springer Nature Switzerland.
- Hosen, M.I.**, and Islam, M.B., Single Image Super-Resolution Using Inverted Residual and Channel-Wise Attention, IEEE International Symposium on Intelligent Signal Processing and Communication Systems (ISPACS 2022), November 22-25, Penang, Malaysia (**Nominated for Best Paper Award**)
- Hosen, M.I.**, and Islam, M.B., Masked Face Inpainting Through Residual Attention UNet, IEEE Conference on the Innovations in Intelligent Systems and Applications (ASYU 2022), September 7-9, Antalya, Turkey
- Hosen, M.I.**, and Islam, M.B., Emotion, Age and Gender Prediction Through Masked Face Inpainting, IAPR International Conference on Pattern Recognition Workshop (ICPRW 2022), August 21-25, Montreal, Canada.

**Hosen, M.I.**, and Islam, M.B., HiMFR: A Hybrid Masked Face Recognition Through Face Inpainting, IAPR International Conference on Pattern Recognition Workshop (ICPRW 2022), August 21-25, Montreal, Canada.

**Hosen, M.I.**, Islam, M.B. and Sadeghzadeh, A., An Effective Multi-Camera Dataset and Hybrid Feature Matcher for Real-Time Video Stitching. In 2021 36th International Conference on Image and Vision Computing New Zealand (IVCNZ 2021) (pp. 1-6). IEEE. DOI: 10.1109/IVCNZ54163.2021.9653352.

R. Akter and **Hosen, M.I.**, CNN-based Leaf Image Classification for Bangladeshi Medicinal Plant Recognition, 2020 Emerging Technology in Computing, Communication and Electronics (ETCCE), Bangladesh, 2020, pp. 1-6, doi: 10.1109/ETCCE51779.2020.9350900.

## IN REVIEW

Yildirim, G., Imani, H., **Hosen, M.I.**, Aydin, T., Optimization in CNN-Based Object Detection Models: A Taxonomy of Architectural Pruning Techniques, First University Journal of Experimental and Computational Engineering (**Under Review**).

## IN PREP.

**Hosen, M.I.** and Biswas, A., Video Based Parkinson Disease Detection and Severity Measurement.

**Hosen, M.I.** and Aydin, T., Privacy Enhancement: Generating Realistic Human Face Replacement in Visual Media.

## Presentations

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### INVITED TALKS

*From Exploration to Innovation of Computer Vision*. Invited talk: Event That I Presented At, Osman Gazi University, Eskişehir, Turkey, 2023.

*Computer Vision: Future Eyes*. Invited talk: Event That I Presented At, Manarat International University, Dhaka, Bangladesh, 2023.

*Research is the key to higher study*. Invited talk: Event That I Presented At, Manarat International University, Dhaka, Bangladesh, 2023.

## Outreach & Professional Development

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### SERVICE AND OUTREACH

2025-2025	<b>IEEE International Conference (IPTA 2025)</b> , Special Session Co-Chair
2025-2025	<b>International Conference (ICBS-1)</b> , Panel Chair
2019-2020	<b>MIU Computer Club</b> , Advisor
2016-2017	<b>Leo Club of JU</b> , President
2015-2016	<b>JU Science Club</b> , Vice president
2015-2016	<b>JU Rover Scout</b> , Assistant Senior Rover Mate