

# Md Amran Hossen Bhuiyan, Ph.D.

Postdoctoral Research Fellow, York University, Toronto, Ontario

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 Canadian Permanent Resident |  Bangladeshi

## Professional Summary

PhD-trained AI/ML researcher with 10+ years of experience in computer vision and multimodal learning, spanning video surveillance, sport analytics, healthcare AI, and data-driven decision support; publications include CVPR, ECCV, *Pattern Recognition*, CVIU, ACM Computing Surveys, ACL, EMNLP, and AAAI.

## Education

### Istituto Italiano di Tecnologia (IIT) – University of Genova

Genova, Italy

Ph.D. in Computer Vision, Recognition and Machine Learning

Mar 2014 – Apr 2017

Dissertation: *Person Re-identification: From Closed to Open-World Scenario*.

### Lucian Blaga University of Sibiu (Erasmus)

Sibiu, Romania

M.Sc. in Computer Engineering and Information Technology

Sep 2009 – Jun 2011

CGPA: 9.75/10.00 (Rank 1/32). Dissertation: *Image Processing for Skin Cancer Features Extraction*.

### University of Dhaka

Dhaka, Bangladesh

B.Sc. in Electrical, Electronics, and Communication Engineering

Jun 2003 – Jan 2009

First Class (Rank 4/58).

## Research & Industry Experience

### York University

Toronto, Canada

Postdoctoral Research Fellow

May 2022 – Present

Mentors: Prof. Jimmy Xiangji Huang & Prof. Aijun An

– Current research on domain generalization and vision-language person re-identification, LVLM evaluation for chart reasoning, and diffusion models for recommendation, with applications in video surveillance, sport analytics, healthcare AI, and data-driven decision support.

#### – Key projects (selected):

- *From Vision Foundations to Language-Driven Advances in Person Re-Identification* (**Under Review**) — vision-language ReID analysis and benchmarking.
- *Agentic Captioning & Relation-Aware Distillation for Efficient Text-to-Image Person Re-Identification* (**Under Review**) — efficient VL ReID via agentic captions + distillation.
- *Augmentation-Invariant Structure Loss (AISL) for Domain-Generalized ReID with Advanced Augmentation* (**In Preparation**) — robustness under domain shift.
- *Modeling Item-Level Dynamic Variability with Residual Diffusion for Bundle Recommendation* (**AAAI 2026**) — diffusion-based ranking for decision support.
- *Judging the Judges: Can LVLMs Fairly Evaluate Chart Comprehension and Reasoning?* (**ACL 2025**) — evaluation + safety for multimodal reasoning.
- Representative outputs: *Pattern Recognition* 2025; *ACM CSUR* 2024; *ACL* 2025; *AAAI* 2026.

### Veyetals & MarkiTech.AI

Toronto, Canada

Deep Learning Advisor

Feb 2024 – Dec 2024

– Led R&D of a real-time rPPG-based vital-sign monitoring system from facial videos and delivered deployment pipelines for web/mobile telehealth (Android/iOS).

### Waysights Inc.

Toronto, Canada

AI Engineer (Computer Vision)

Dec 2025 – May 2025

– Developed and fine-tuned YOLOv5-based Canadian traffic sign detection models, improving detection accuracy under real-world road conditions.

### École de Technologie Supérieure (ÉTS) & SPORTLOGiQ Inc.

Montréal, Canada

Industrial Postdoctoral Fellow

Jan 2018 – Mar 2021

Mentors: Prof. Eric Granger & Dr. Mehrsan Javan

– Player analytics: ReID/tracking + activity/group modeling; UDA + pose-gated fusion + RGB-Depth ReID; efficiency (pruning/attention) + deployment (**ECCV 2020, WACV 2020, AVSS 2019, CVIU 2022, EURASIP JIVP 2021, Image and Vision Computing 2021** ).

## University of California, Riverside

Visiting Scholar (PhD Research Intern)

Mentor: Prof. Amit K. Roy-Chowdhury & Prof. Vittorio Murino

Riverside, USA

May 2016 – Oct 2016

- Formulated a domain-adaptive re-identification method using geodesic flow kernels to match new cameras without retraining (**CVPR 2017**).

## Teaching Experience

### York University

Adjunct Faculty

- Delivered *Information and Organizations* and *Internet Client–Server Systems* in in-person/hybrid modes.

Toronto, Canada

Jan 2023 – Present

### Noakhali Science and Technology University

Assistant/Associate Professor

- Taught AI, computer vision, digital signal processing; supervised capstone and graduate research projects.

Bangladesh

Mar 2012 – May 2022

## Selected Publications

**Full list:** Google Scholar.

- D. Zhang, L. Li, M. Li, **Amran Bhuiyan**, X. Tao, M. Sun, J. X. Huang. *Modeling Item-Level Dynamic Variability with Residual Diffusion for Bundle Recommendation*. **AAAI 2026**.
- **Amran Bhuiyan**, A. An, J. X. Huang, J. Shen. *Optimizing Domain-Generalizable Re-Identification through Non-Parametric Normalization*. **Pattern Recognition 2025**.
- M. T. R. Laskar, M. S. Islam, R. Mahbub, A. Masry, M. Rahman, **Amran Bhuiyan**, et al. *Judging the Judges: Can Large Vision-Language Models Fairly Evaluate Chart Comprehension and Reasoning?* **ACL 2025**.
- **Amran Bhuiyan**, J. X. Huang, A. An. *IGMG: Instance-Guided Multi-Granularity Learning for Domain-Generalizable Person Re-Identification*. **Computer Vision and Image Understanding 2024**.
- M. T. R. Laskar, M. S. Bari, M. Rahman, **Md Amran Hossen Bhuiyan**, S. Joty, J. X. Huang. *A Systematic Study and Comprehensive Evaluation of ChatGPT on Benchmark Datasets*. **ACL Findings 2023**.
- D. Mekhazni, **Amran Bhuiyan**, G. Ekladious, E. Granger. *Unsupervised Domain Adaptation in the Dissimilarity Space for Person Re-Identification*. **ECCV 2020**.
- R. Panda\*, **Amran Bhuiyan\***, V. Murino, A. K. Roy-Chowdhury. *Unsupervised Adaptive Re-Identification in Open-World Dynamic Camera Networks*. **CVPR 2017** (Spotlight). (\*equal contribution)
- **Amran Bhuiyan**, Alessandro Perina, Vittorio Murino. *Person Re-Identification by Discriminatively Selecting Parts and Features*. **ECCV-WK 2014 - Winner of the Intel Best Paper Award**.

## Patents

1. Mehrsan Javan, **Amran Bhuiyan**, et al.. *System and Method for Identity Preservative Representation of Persons and Objects Using Spatial and Appearance Attributes*. US Patent Pub. No: US 2022/0383662 A1, Pub. Date: Dec. 01, 2022.

## Grants, Fellowships & Honors (Selected)

- **SSHRC (York)** — Co-I, *DG for Person ReID* (2022–2023).
- **Mitacs** — Elevate Industrial Postdoc (2019–2021) + Accelerate Internship (2018) at ÉTS/SPORTLOGiQ.
- **Scholarships** — IIT PhD Fellowship (2014–2017) + Erasmus Mundus (2009–2011).
- **Intel Best Paper Award** — **ECCV 2014**: *Person Re-identification by Discriminatively Selecting Parts and Features*.
- **Academic Merit Scholarship** — University of Dhaka (Ranked 4th in B.Sc.).

## Technical Skills

- Computer Vision, Machine Learning, Digital Image Processing, and Natural Language Processing.
- Python, PyTorch, TensorFlow/Keras, Java, MATLAB, C/C++, PL/SQL, Lua.

## Professional Service & Outreach

- **Conference Organization:** Technical Program Co-Chair & Track Chair (MIET 2022); Track Chair (IEEE WI-IAT 2022).
- **Journal Reviewing:** Reviewer for *IEEE TPAMI*, *Pattern Recognition*, *CVIU*, *Sensors*, and others.
- **Conference Reviewing:** CVPR, ICCV, ECCV, NeurIPS, AAAI, ICML, WACV, AVSS, ICIP, ACL, EMNLP, SIGIR, KDD.

## References

### Prof. Jimmy Xiangji Huang

Director of IR & KM Research Lab

York University, Canada

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[www.yorku.ca/jhuang/](http://www.yorku.ca/jhuang/)

### Prof. Vittorio Murino

Principal Investigator, AIGO- AI for Good

University of Verona, Italy

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