Md. Tanvir Hossain

Computer Science Educator | Tutor | PhD Researcher, HIT Lab NZ
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Work rights: New Zealand student visa with open work rights (any employer, any occupation), valid to March 2028.

PROFILE

Computer science educator with six years of university teaching at the University of Rajshahi, first as Lecturer and then as Assistant Professor, plus teaching assistant experience at the Australian National University. Has taught programming, software engineering, databases, computer graphics, HCI and virtual reality to undergraduate and postgraduate students. Currently completing a PhD at HIT Lab NZ, University of Canterbury, and holds a master's in Machine Learning and Computer Vision from ANU. Brings real industry examples into teaching from four years as a software engineer and from running a software company since 2017.

SUBJECTS I CAN TEACH

- **Programming:** Python, C, C++, Java, C#; introductory programming and programming for scientists.
- **Computer science:** software engineering, database systems, computer graphics, simulation and modelling, network design and management.
- **Applied and emerging areas:** machine learning, computer vision, HCI, virtual and augmented reality, Unity development, web development.
- **Research skills:** research design, user studies, academic writing, qualitative data preparation.
- **Levels:** university (undergraduate and postgraduate), plus school-level maths and coding for private tutoring.

TEACHING EXPERIENCE

Assistant Professor, Computer Science and Engineering — **Aug 2019 to present (study leave)**
University of Rajshahi, Bangladesh

Lecturer, Computer Science and Engineering — **Aug 2016 to Jul 2019**

- Taught undergraduate and postgraduate courses including programming (C, C++, Java), software engineering, database systems, computer graphics, HCI and virtual reality, simulation and modelling, and network design and management.
- Designed course materials, lesson plans and assessments; marked work and gave individual feedback; held office hours and small-group sessions.
- Supervised student projects and research.
- Coordinator of the university's AR/VR/MR Lab from 2018; helped establish what was then the largest AR/VR/MR laboratory in Bangladesh, and set up an HCI project-incubation lab for students.

Teaching Assistant — **Semester 1, 2023**
Australian National University, Canberra

- COMP6730 Programming for Scientists: guided students through weekly programming assignments and ran student consultations.

RESEARCH AND PROFESSIONAL EXPERIENCE

PhD Researcher — **Nov 2024 to present**
HIT Lab NZ, University of Canterbury, Christchurch

- Building a real-time feedback system (wearable sensors, computer vision and adaptive audio) to help athletes improve rhythm, in partnership with High Performance Sport New Zealand.
- Designing and running multi-day user studies with coach-athlete pairs; lead author of a scoping review in Sports Engineering (2026).

Research Assistant (fixed-term contract) — **Mar 2025 to Apr 2025**
Department of Management, Marketing and Tourism, University of Canterbury

- Transcribed and cleaned qualitative research data for a departmental research project.

Software industry **2012 to present**

- Managing Director, CODEVRS Limited (2017 to present): custom software, OMR systems, CRM modules and VR 360-degree tours for clients.
- Software Engineer, then Senior Software Engineer, rajIT Solutions Ltd. (2012 to 2016): full-lifecycle development of desktop and web applications.
- Freelance Developer (Feb to Nov 2025): browser-based 3D model viewer (A-Frame, Three.js, Blender) for a New Zealand agricultural machinery distributor.

EDUCATION

PhD, Human Interface Technology, HIT Lab NZ, University of Canterbury **Nov 2024 to present**

Master of Machine Learning and Computer Vision, Australian National University (GPA 5.94/7; Australia Awards Scholarship) **2024**

M.Sc. in Computer Science and Engineering, University of Rajshahi (first in order of merit; CGPA 3.888/4) **2013**

B.Sc. (Hons) in Computer Science and Engineering, University of Rajshahi (first in order of merit; CGPA 3.720/4) **2012**

SELECTED PUBLICATIONS

Hossain, M. T., Lindeman, R. W., Ingram, M., & Lukosch, S. (2026). Augmenting rhythm: A scoping review of technologies and feedback modalities in elite sport. Sports Engineering, 29, 32. https://doi.org/10.1007/s12283-026-00562-7

Hossain, M. T., Ameen, M. R., Islam, A., et al. (2026). Beyond ray-casting: Evaluating controller, free-hand, and virtual-touch modalities for immersive text entry. PECCII 2026. https://doi.org/10.1109/PECCII70991.2026.11661903

Hossain, M. T., Islam, A., & Ameen, M. R. (2026). CountFormer: A transformer framework for learning visual repetition and structure in class-agnostic object counting. IEEE QPAIN 2026. https://doi.org/10.1109/QPAIN69676.2026.11546546

Nine publications in total since 2017; full list on ORCID.

LANGUAGES

- Bengali: native. English: full professional proficiency; master's (ANU) and PhD (UC) studied in English; IELTS Academic overall 7.5 (2022).

REFEREES

Available on request, including New Zealand referees.