Md Tanzil Shahria

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Education

University of Wisconsin-Milwaukee — Wisconsin, United States
- *M.S. leading Ph.D. in Computer Science* — *Aug. 2021 – Present*
  Current CGPA: 4.00 on a scale of 4.00 (After 13/66 credits)

North South University — Dhaka, Bangladesh
- *Bachelor of Science in Computer Science and Engineering* — *Jan. 2014 – Dec. 2018*
  Overall CGPA: 3.85 on a scale of 4.00 (Summa Cum Laude)

Research Focus

Machine Learning — Data Analysis — Computer Vision — Biorobotics — Vision-Based Robot Manipulation

Research and Teaching Experience

- **University of Wisconsin-Milwaukee** — Wisconsin, USA
  Graduate Research Assistant — *Aug. 2022 - Present*
  - **Responsibilities**: Developing a vision-guided robot manipulation system. Potential applications of the system are assistive robots, mobile robots, and autonomous/semi-autonomous robot control systems.

- **University of Wisconsin-Milwaukee** — Wisconsin, USA
  Graduate Teaching Assistant — *Aug. 2021 - May. 2022*
  - **Responsibilities**: Conducting lab classes, helping students with lab tasks, grading lab tasks, home-works, assignments and exam scripts, maintaining office hours for the students, etc.
  - **Course**: Intermediate Computer Programming, System Programming, Computer Architecture.

- **North South University** — Dhaka, Bangladesh
  Lab Officer (Part-time) — *Jan. 2019 - Oct. 2020*
  - **Responsibilities**: Conducting lab classes, helping students with lab tasks, grading home-works, assignments and exam scripts, maintaining office hours for student consolation.
  - **Courses**: Programming Language, Digital Logic Design, Analog Electronics.

- **Presidency University** — Dhaka, Bangladesh
  Lecturer (Part-time) — *Sept. 2019 - May 2020*
  - **Responsibilities**: Conducting classes, helping students with tasks, grading home-works, assignments and exam scripts, maintaining office hours for student consolation.
  - **Courses**: Computer Programming, Computer Applications.

Professional Experience

- **Advanced Software Technology International Ltd.** — Dhaka, Bangladesh
  Chief Business Development Officer — *Jan. 2021 - Jun. 2021*
  - **Responsibilities**: Developing and sustaining relationships with stakeholders and clients, recruiting and guiding staffs, conducting market research for new business opportunities, providing insight into product development, etc.

- **The Tech Academy** — Dhaka, Bangladesh
  Curriculum Developer (Intern) — *July 2018 – Sept. 2018*
  - **Responsibilities**: Introducing new contents for course materials over electronics and programming focusing on standard micro-controller interfacing and game development using Processing within the context of visual arts.

Grants

IEEE Robotics and Automation Special Interest Group on Humanitarian Technology
- *"Gear for Automation, Using Robotics to BRING BACK Jobs for Workers in Garments Industry", $3000.*
  July 2018.

Peer-Reviewed Journal

- **Shahria, M. T.**, Sunny, M. S. H., Zarif, M. I. I., Ghommam, J. , Ahamed, S.I., & Rahman, M. H. (2022). **A Comprehensive Review of Vision-Based Robotic Applications: Current State, Components, Approaches, Barriers, and Potential Solutions**. *Robotics.* (Under Review)
- Pillai, A., Sunny, M. S. H., **Shahria, M. T.**, & Rahman, M. H. (2022). **Gamification of Upper Limb Rehabilitation in Mixed-Reality Environment**. *Applied Sciences.* (Under Review)
- **Shahria, M. T.**, Sunny, M. S. H., Zarif, M. I., Khan, M. M. R., I., Ahamed, S.I., & Rahman, M. H. (2022). **A Novel Framework for Mixed Reality-Based Control of Collaborative Robot**. *JMIR Biomedical Engineering (JBME).*
- Sumon, S. A., Goni, R., Hashem, N. B., **Shahria, M. T.**, & Rahman, R. M. (2020). **Violence Detection by Pretrained Modules with Different Deep Learning Approaches**. *Vietnam Journal of Computer Science,* 7(01), 19-40.

Peer-Reviewed Conference Proceedings

[1] **Shahria, M. T.**, Arvind, A., Iqbal, I., Ahmed, H. U., & Rahman, M. H. (2023, May). **Vision-Based Localization and Tracking of Objects Through Robotic Manipulation**. *The 40th IEEE Conference on Robotics and Automation (ICRA 2023)* (Under Review).

[2] Zarif, M. I. I., **Shahria, M. T.**, Sunny, M. S. H., Ahamed, S.I., & Rahman, M. H. (2022, June). **A Vision-based Guided System to Maneuver Assistive Robotic Arm in 3D Environment**. *International Conference of Control, Dynamic Systems, and Robotics (CDSR'22).*

[3] **Shahria, M. T.**, Zarif, M. I. I., Sunny, M. S. H., Ahamed, S.I., & Rahman, M. H. (2021, December). **Mapping and Localization in 3D Space for Vision-based Robot Manipulation**. *International Conference on Industrial and Mechanical Engineering and Operations Management (IMEOM 2021).*

[4] **Shahria, M. T.**, Progga, F. T., Ahmed, S. & Arisha, A. (2021, February). **Application of Neural Networks for Detection of Sexual Harassment in Workspace**. *In IEEE International Conference on Advances in Electrical, Computing, Communications and Sustainable Technologies (ICAECT 2021).* (pp. 1-4). IEEE.

[5] **Shahria, M. T.**, Iftekhar, L., & Rahman, M. H. (2020, December). **Learning-Based Approaches in Swarm Robotics: In A Nutshell**. *In International Conference on Mechanical, Industrial & Energy Engineering.*

[6] Progga, F. T., **Shahria, M. T.**, & Ahmed, N. (2020, December). **The Effectiveness and Acceptance of Collaborative E-learning in the Context of Bangladesh**. *In 2020 IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE).* IEEE.

[7] Amir, S., Kamal, M. S., **Shahria, M. T.** & Iftekhar, L.(2020, December). **Facebook's Social Learning Group for Undergraduate Engineering Courses: A Case Study of Emergency Remote Teaching Amid Large Digital Divide**. *In 2020 IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE).* IEEE.

[8] Progga, F. T., **Shahria, M. T.**, Arisha, A., & Shanto, M. U. A. (2020, October). **A Deep Learning Based Approach to Child Labour Detection**. *In The Information Technology International Seminar (ITIS).* IEEE.

[9] **Shahria, M. T.**, Rahman, A., Zunair, H. & Aziz, S.B.(2019, December). **Collector: A Vision-based Semi-autonomous Robot for Mangrove Forest Exploration and Research.** *In 2019 International Conference on Mechatronics, Robotics and Systems Engineering (MoRSE)* (pp. 207-212). IEEE.

[10] **Shahria, M. T.**, Shekhar, S., Haque, M. I. & Iftekhar, L.(2019, December). **Development of a Curriculum to Teach Electronics to Workers of Garments Industry in Bangladesh: A Visual Literacy Approach**. *In 2019 IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE).* IEEE.

[11] **Shahria, M. T.**, & Ahmed, N.(2019, December). **Collaborative Group Learning in Programming Classes**. *In 2019 IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE)*. IEEE.

[12] Sumon, S. A., **Shahria, M. T.**, Goni, M. R., Hasan, N., Almarufuzzaman, A. M., & Rahman, R. M. (2019, April). **Violent Crowd Flow Detection Using Deep Learning.** *In Asian Conference on Intelligent Information and Database Systems* (pp. 613-625). Springer, Cham.

[13] **Shahria, M. T.**, Rabbi, S., Zaman, K.T. & Khan, M.M. (2019, February). **Underwater Research and Rescue Robot**. *In 2019 IEEE International Conference on Electrical, Computer and Communication Technologies (ICECCT)* (pp. 1-5). IEEE.

Honors & Awards

- **UWM Graduate Student Excellence Fellowship (GSEF) Awards**: *UWM Graduate School* selected and offered one of the 2022-23 UWM Graduate Student Excellence Fellowship (GSEF) awards to recognize and applaud academic performance and potential.
- **Chancellor's Graduate Student Award**: *The College of Engineering & Applied Science (CEAS), University of Wisconsin-Milwaukee* offered a Chancellor's Graduate Student Award for the Spring semester of the 2021-2022 Academic Year.
- **Finalist**: *NASA Human Exploration Rover Challenge 2019*, an engineering design challenge to engage students worldwide in the next phase of human space exploration.
- **Champion**: *IEEE SS12 Project Competition And Maker Fair 2017*, an international talent show for students and young professionals to showcase their innovative ideas to solve humanitarian issues affecting the community around them.
- **1st Runner-up**: *Intra INSB Robot Design Challenge 2015*, a local competition on low cost robot designing.

Leadership Experience

- **Chair *(January 2018 - July 2020)***: Served as the chair of the *IEEE North South University Robotics and Automation Society Student Branch Chapter*, the first official Robotics and Automation Society (RAS) Student Branch Chapter in Bangladesh.

Volunteer & Co-curricular Activities

- **Peer-Reviewer**: Served as a peer-reviewer to the following journals and conferences: *2023 IEEE International Conference on Robotics and Automation (ICRA), World Journal of Clinical Oncology, and IEEE International Conference on Teaching, Assessment, and Learning for Engineering (TALE) 2019.*
- **Session Chair**: Served as a session chair at the *International Conference on Mechatronics, Robotics, and System Engineering (MoRSE 2019).*
- **Proctor**: Served as a proctor of the *IEEEXtreme (14.0 and 13.0)*, a global challenge in which teams of IEEE Student members compete for 24 hours against each other to solve a set of programming problems.
- **Organizer**: Served as an organizer in various national events including *Student Professional Awareness Conference (SPAC) 2019, Electrathon 2018, IEEE Day 2018 at NSU, Student Professional Awareness Conference (SPAC) 2018, IEEE SYWC Congress 2017*, etc.
- **Instructor**: Served as an instructor in various local workshops including *Basic Robotics Workshop, Advance Robotics Workshop, Workshop on Home Automation, Introduction to Robotics (ROBO 101), Workshop on Basic Robotics at BAIUST (outreach program), Workshop on Printed Circuit Board Designing*, etc.

Skills

- **Programming Skills:** Python, C, C++, Java, MATLAB.
- **Machine Learning Libraries:** scikit-learn, pandas, numpy, matplotlib.
- **Deep Learning Libraries:** Keras, Tensorflow.
- **Hardware Skills:** Micro-controllers/processors, Sensors and Actuation, Printed Circuit Boards.
- **Software:** CodeBlocks, Eclipse, Sublime, Multisim, Proteus, Arduino IDE, Processing IDE.
- **Version Control:** Git, Github