MUHAMMAD MUZAMMIL

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EDUCATION

University of Toronto Toronto, ON
HBSc. in Computer Science, Minors in Mathematics and Statistics Sep. 2021 – Present

- **Focuses**: Artificial Intelligence & Computer Vision
- **GPA**: 3.97/4.00
- **Anticipated graduation**: June 2026

The York School Toronto, ON
International Baccalaureate & Ontario Secondary School Diploma Sep. 2018 – Jun. 2021

- **IB Score**: 41/45
- **Overall Average**: 96.3%

EXPERIENCE

Research

Research Intern Sep. 2025 – Present
Koziarski Lab - SickKids

- Developing deep learning methods to detect cell senescence for determining the efficacy of senomorphic drug candidates under the supervision of **Dr. Michał Koziarski**.

CSC495 Student May 2025 – Present
University of Toronto

- Assessing the effect of synthetic training data on pain detection model performance under the supervision of **Professor Babak Taati**.

CSC494/495 Student May 2024 – Dec. 2024
University of Toronto

- Developed a C++ simulator (HanaSim) and a reinforcement learning-based agent for the card game Hanabi under **Professors Alice Gao & Jonathan Calver**.

ROP Student May 2023 – Aug. 2023
IAI Lab - U of T

- Assisted graduate students in human-computer interaction research including programming tasks and literature reviews under **Professor Joseph Jay Williams**.

Teaching

CSC148: Intro CS Jan. 2026 – Present
University of Toronto

- Hosting weekly office hours and assisting with exam invigilation & marking

CSC207: Software Design Sep. 2025 – Dec. 2025
University of Toronto

- Hosted weekly office hours and assisted with exam invigilation, marking, and presentation reviews.

CSC148: Intro CS Sep. 2025 – Dec. 2025
University of Toronto

- Led two weekly two-hour lab sessions and assisted with exam invigilation, marking, and office hours.

Software Developer Intern Sep. 2023 – Apr. 2024
FnS Consulting Inc. - Toronto, ON

- Designed and developed an end-to-end web application for a risk management system using JavaScript/TypeScript, React, HTML/CSS, and ASP.NET Core (C#).

PUBLICATIONS

- Taati, B., **Muzammil, M.**, Zarghami, Y., Moturu, A., Kazerouni, A., Mihailidis, A., Reimer, H., & Hadjistavropoulos, T. (2025). SynPAIN: A Synthetic Dataset of Pain and Non-Pain Facial Expressions. *IEEE Journal of Biomedical and Health Informatics.* (UNDER REVIEW, arXiv)

- Zarghami, Y., **Muzammil, M.**, Adeli, V., Reimer, H., Hadjistavropoulos, T., & Taati, B. (2025). PainControl: Identity-Preserving Pain Expression Transfer with Generative Diffusion Models. *BioMedical Engineering OnLine.* (UNDER REVIEW)

- Reimer, H., Zarghami, Y., **Muzammil, M.**, Sabo, A., Moturu, A., Taati, B., & Hadjistavropoulos, T. (2025, October). Improving Pain Detection Algorithms with AI-Generated Images: Validation of AI-generated Images Depicting Pain Expressions [Poster presentation]. *In AGE-WELL Annual Conference*, [Montreal, Quebec, Canada].

- Moturu, A., **Muzammil, M.**, Goldenberg, A., & Taati, B. (2026). Sample Reweighting to Effectively Use Synthetically Generated Data during Model Training. *International Conference on Learning Representations* (UNDER REVIEW)

TECHNICAL SKILLS

Languages: C#, Python, JavaScript/TypeScript, GraphQL, Java, C/C++, SQL, HTML/CSS, R, MATLAB, Swift
Frameworks: React, Node.js, ASP.NET Core
Developer Tools: Git, Docker, VS Code, Visual Studio, PyCharm, IntelliJ, CLion
Libraries: pandas, NumPy, Matplotlib, PyTorch, scikit-learn
Databases: MySQL, MSSQL, FireBase
Cloud Technologies: Microsoft Azure
Mobile App Development: iOS, AndroidOS

SOFT SKILLS

Organization: Demonstrated ability to efficiently organize tasks in a centralized system and maximize productivity through strategic, detail-oriented planning
Collaboration: Collaborates effectively with individuals from diverse backgrounds to drive successful project outcomes
Problem-solving: Proactively identifies and resolves issues independently as they arise
Leadership: Leads with initiative, motivating team members and driving performance to consistently achieve project milestones
Mentorship: Experienced in mentoring peers, promoting growth, and building a culture of continuous improvement

ACHIEVEMENTS & AWARDS

Innis College Exceptional Achievement Award: 2024
Later Life Learning Scholarship: 2022 & 2023
University of Toronto Dean's List Scholar: 2022, 2023 & 2024
University of Toronto Scholars Award: 2021
Ontario Scholar Award: 2021
The York School Award of Excellence: 2021 (*Chemistry, Math, & Physics*)
The York School Head's List: 2021