

# Tameem Uz Zaman

tameemuz.zaman01@utrgv.edu · [LinkedIn](#) · [Github](#) · [Portfolio](#)  
Edinburg, Texas, 78541

---

## SKILLS

- Software Development
- Reinforcement Learning
- Model Deployment
- Relational Database
- NoSQL Database
- Linux
- LLM Fine-tuning
- Machine Learning
- Git Version Control
- Data Structures & Algorithms
- Programming Languages - Java, Python, C++.

---

## EDUCATION

MS in Computer Science

**The University of Texas Rio Grande Valley**

CGPA - 3.71/4.0 (Nominated for Student Employee of The Year Award)

Bachelor of Computer Science

Major in Computer Networks & Security

**University of Technology Malaysia** (#181 QS Ranking)  
CGPA - 3.7/4.0 (Dean's Award)

---

## PROFESSIONAL EXPERIENCE

**MARS Lab - The University Of Texas Rio Grande Valley**

**Sep. 2024 - Present**

**Graduate Research Assistant**

- Under Dr. Qi Lu, researching Deep Reinforcement Learning in robotics.
- Developed penalty based reward system, which increased foraging speed by 15%.
- Collaborating on projects involving AI-driven optimization, integrating Python and PyTorch.
- Used C++ and ROS2 in Argos simulation to simulate the robots in Linux.

---

## CONFERENCE WORKSHOP PAPER

**Training Adaptive Foraging Behavior for Robot Swarms with Distributed Neuroevolution of Augmented Topologies [AAAI 2025]**

The paper discusses the use of NeuroEvolution of Augmented Topologies (NEAT) to optimize swarm robotic foraging behaviors, focusing on resource retrieval efficiency and obstacle avoidance in dynamic environments. It highlights a novel penalty-reward system to improve coordination and minimize energy expenditure, demonstrating the advantages of NEAT over traditional swarm algorithms.

[GitHub Link](#) [AAAI25 Paper Link](#) [AAAI25 Poster Link](#)

---

## LATEST PROJECTS

**Enhancing GAN Stability and Image Quality: A Comparative Study of GAN Variants for Image Generation** [🔗](#)

**Key Contributions:**

- Implemented and compared three GAN variants (Baseline GAN, DCGAN, WGAN-GP) for generating images of handwritten digits (MNIST) and faces (CelebA) using PyTorch.
- Evaluated models using Fréchet Inception Distance (FID) score and visual inspection, achieving a best FID score with WGAN-GP on CelebA.
- Conducted experiments to improve training stability, including hyperparameter tuning and label smoothing, resulting in insights on mitigating mode collapse.

**Deep Q-Learning for MountainCar-v0** [🔗](#)

**Key Contributions:**

- Designed and implemented a Deep Q-Network (DQN) using PyTorch to train an agent for the MountainCar-v0 environment in Gymnasium.
- Optimized the training process with experience replay, target network updates, and epsilon-greedy exploration.
- Achieved efficient learning by fine-tuning hyperparameters, enabling the agent to solve the environment consistently.
- Incorporated reward shaping and checkpointing for progress monitoring, and utilized TensorBoard for performance visualization.

**Medical Image Segmentation on COVID CT Scans using UNet** [🔗](#)

**Key Contributions:**

- Implemented and evaluated an UNet model on COVID CT Scan images.
- Implemented a Dice Score Evaluation to get the best segmentation model.
- Leveraged PyTorch's automatic mixed precision method to speed up training and reduce GPU memory usage.
- Performed 5-Fold Cross Validation which provides reliable model performance.