Fotih Turopov

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Education

Case Western Reserve University — Cleveland, OH
MS in Machine Learning and Artificial Intelligence — *May 2028*
BS in Computer Science, Minors: Business Management, Mathematics — *May 2028*
Dean's Honor List (2025, 2026), Dean's High Honor List (2026)
GPA: 3.53

Experience

Teaching Assistant, CSDS 330, Introduction to Artificial Intelligence — Aug. 2026 – Present
Case Western Reserve University — *Cleveland, OH*
- Taught weekly office hours and recitations to 15 students, reviewing lecture content on search algorithms, machine learning, and probability.
- Graded assignments and exams, providing feedback on neural networks, A* search, Bayesian inference, etc.

AI / Machine Learning Research Assistant — Sept. 2025 – Present
Case Western Reserve University, with Prof. Shuai Xu — *Cleveland, OH*
- Conducted literature reviews on deep learning, neural networks, and MoE models to identify research gaps.
- Assisted in designing experimental pipelines to evaluate model performance and architectural tradeoffs.
- Collaborated with faculty and graduate researchers to discuss model design choices and future experiments.

Member of Robotics Software team — Jan. 2025 – Present
CWRUbotix, MATEROV — *Cleveland, OH*
- Developed ROS-based Python nodes for simulated robot control during internal bootcamp training.
- Configured Raspberry Pi Zero 2 W as a camera-streaming node for a USB-based photosphere imaging system.
- Designed and implemented real-time computer vision pipelines using ROS, FLIR cameras for object detection.

Office Assistant — Sept. 2024 – Present
Weatherhead School of Management, CWRU — *Cleveland, OH*
- Prepared 200+ personalized mailings and gift packages for donors and alumni, supporting engagement.
- Managed inventory tracking for 2,500+ items using Excel, ensuring real-time accuracy for events and operations.
- Coordinated outgoing shipments and internal package distribution for faculty, ensuring timely delivery.

Projects

Sparse Mixture-of-Experts Language Model | *Python, PyTorch* — Sep 2026
- Built and trained a 60.6M-parameter decoder-only transformer with rotary position embeddings and sparse Top-2 expert routing on 20M TinyStories tokens.
- Achieved 6.9% lower validation perplexity than a dense baseline under the same training-token budget, evaluating model quality and computational trade-offs.
- Implemented KV-cached text generation and developed correctness tests for causal attention, expert-routing gradients, and cached inference equivalence.

Neighborhood Navigator | *Python* — May 2025
- Built a terminal-based Python application to filter and rank housing options using multi-criteria decision logic.
- Implemented weighted scoring, sorting algorithms, and user-defined constraints

Virtual Pet Simulator | *Javascript* — May 2024
- https://fotiht.github.io/
- Developed an interactive JavaScript-based virtual pet game with decision-driven gameplay.
- Implemented shop/economy mechanics, state management, and persistent inventory tracking.

Technical Skills

Languages: Python, Java, JavaScript, SQL
Tools and Platforms: Git, GitHub, ROS, Ubuntu, VS Code, PyCharm, IntelliJ, PyTorch, TensorFlow
Software: Microsoft Office Suite (Excel, Word, PowerPoint)
Soft: Public Speaking, Event Planning, Communication, Problem Solving, Leadership Development