Ghazi Gharsallah

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Technical Skills

- Programming Languages: Python, R, C++, C, SQL
- Frameworks & Tools: TensorFlow, PyTorch, CUDA, Jupyter Notebook, Numpy, Pandas, Hugging Face
- Areas of Expertise: Artificial Intelligence, Deep Learning, Computer Vision, Transformers, V2X, 6G

Publications

[**2**] G. Gharsallah and G. Kaddoum, "MVX-ViT: Multimodal Collaborative Perception for 6G V2X Network Management Decisions Using Vision Transformer," in IEEE OJCS (2024), [Paper Link] [Project Link]

[**1**] G. Gharsallah and G. Kaddoum, "ViT LoS V2X: Vision Transformers for Environment-aware LoS Blockage Prediction for 6G Vehicular Networks," in IEEE Access (2023), [Paper Link]

Work Experience

Teaching Assistant, ÉTS Montréal, CA. Jan. 2024 - Present
Conduct laboratory and TP sessions for ELE462 and ELE452. Animated AI workshop for ELE767.

AI Research Intern, JACOBB, Montréal, CA. Oct. 2022 - Feb. 2023
Built a data-driven property valuation solution for the real estate industry using DL.

Visiting Student, University of California Irvine, Irvine, USA Feb. 2020 - Jul. 2020
Worked on AI classifiers' robustness to adversarial attacks and proposed effective solutions for CNNs.

AI Research Intern, Mentor Graphics, Tunisia. Sep. 2019 - Jan. 2020
Developed and optimized graph partitioning algorithms using DL to optimize FPGA-based processor emulation.

Data Science Intern, PwC, Tunisia. Mar. 2019 - Jun. 2019
Worked on a banking institution's ML-based customer satisfaction analysis and churn detection framework.

Education

Ph.D. in Electrical Engineering, ÉTS Montréal Sept. 2021 - Present
Research: Digital Twin and Multimodal Collaborative Perception for 6G V2X, GPA 3.96/4.3.

IUT MSc/PhD student, McGill University Sept. 2020 - Aug. 2022
Courses: Network Science, Optimization and Optimal Control, Wireless Communications.

M.Sc. in Electrical Engineering, ÉTS Montréal Sept. 2020 - Aug. 2021
Research: AI in Wireless Communication, 6G V2X RRM, GPA 3.84/4.3.

Bachelor of Engineering, École Polytechnique de Tunisie Sept. 2017 - Aug. 2020
Main courses: Stochastic Processes, Mathematical Optimization, Data Analysis, Machine Learning, Grade: 18/20.

Projects

MVX: Configurable and Scalable Co-Simulation Framework
Developed MVX, the world's first configurable and scalable co-simulation framework integrating NVIDIA's Scionna simulator with the CARLA game engine simulator for 6G V2X digital twin simulations. [Project Link].

Generative AI for 6G V2X Network Traffic Simulation and Optimization
Created a generative AI model to simulate and optimize network traffic in 6G V2X environments for a digital twin solution using diffusion models to generate realistic vehicles behavior.

Real-Time Autonomous Driving System Leveraging 6G V2X Communication Description
Developed a real-time autonomous driving system for enhanced vehicle perception and decision-making. Implemented communication protocols to enable data exchange between vehicles, infrastructure, and pedestrians.

Extracurricular Activities

- **YouTube Content Creator**, Productivity Podcast Host, 2023.
- **IEEE ÉTS Montréal Chapter**, Website Manager, 2021.
- **Association des Jeunes Polytechniciens**, President, 2018.
- **Radio Animator**, Animated a section of a radio program in a national radio station, 2017.
- **AmCham EPT Chapter**, Vice President, 2017.

Awards

- Mitacs Accelerate Fellowship, 2022.
- ÉTS | Exemption from M.Sc. & Ph.D. Tuition Fees, 2020 - 2025.
- UCI | Visiting Student Fellowship, 2020.
- Mitacs Globalink Research Award, 2019.
- Tunisian Engineering Excellence Scholarship, 2017 - 2020.