

# Ghazi Gharsallah

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## Profile

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Ghazi is a motivated and research-driven Ph.D. student at ÉTS Montréal with expertise in Artificial Intelligence (AI), 6G vehicular networks (V2X), and multimodal data analysis. He is proficient in advanced AI techniques, with hands-on experience deploying AI solutions across diverse industries. Ghazi contributes to innovation in next-generation network management and AI-driven technologies, particularly in digital twin and multimodal collaborative perception AI solutions for 6G V2X network management decisions and radio resource management.

## Research Interests

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Deep Learning, Artificial Intelligence, V2X, 6G, Vision Transformers, Multimodal Collaborative Perception.

## Experience

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### ÉTS Montréal

*Teaching Assistant*

Jan. 2024 – Present

Montréal, CA

- Conduct laboratory and TP sessions for ELE462 (S24, H24), ELE452 (S24).
- Animate a conference about AI for ELE767.

### JACOB

*AI Research Intern*

Oct. 2022 – Feb. 2023

Montréal, CA

- Built a data-driven property valuation solution for the real estate industry using Deep Learning during a Mitacs Accelerate internship.

### KinHub

*NLP Engineer*

Jan. 2021 – Aug. 2021

London, UK

- Built a RASA chatbot for health care support, automated data collection process using scraping techniques, built NLP models, deployed NLP models and AI features.

### University of California Irvine

*Visiting Student*

Feb. 2020 – Jul. 2020

Irvine, USA

- Worked on AI classifiers' robustness to adversarial attacks as my bachelor graduation project, analyzing the vulnerability of DL models to different attacks and proposing effective solutions, under the supervision of Pr. Zhiying WANG.

### Mentor Graphics

*AI Research Intern*

Sep. 2019 – Jan. 2020

Tunisia

- Worked on graph partitioning problem optimization solution using deep learning for FPGA-based processor emulation.

### AxeFinance

*ML Engineer Intern*

Jun. 2019 – Sep. 2019

Tunisia

- Built a credit decision-making solution using Machine Learning, specifically targeting the imbalanced data problem.

### PwC

*Data Science Intern*

Mar. 2019 – Jun. 2019

Tunisia

- Proposed a machine learning-based customer satisfaction analysis and churn detection framework for a banking institution.

## Education

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### ÉTS Montréal

*Ph.D. in Electrical Engineering*

Canada

*Sept. 2021 – Present*

- Digital Twin and Multimodal Collaborative Perception for 6G V2X Network Management Decisions and radio resource management, GPA 3.96/4.3.

### McGill University

*IUT MSc/PhD student*

Canada

*Sept. 2020 – Aug. 2022*

- Courses: COMP 596: Network Science, ECSE 507: Optimization and Optimal Control, ECSE 610: Wireless Communications.

### ÉTS Montréal

*M.Sc. in Electrical Engineering*

Canada

*Sept. 2020 – Aug. 2021*

- Wireless Communication, 6G V2X RRM, GPA 3.84/4.3.

### École Polytechnique de Tunisie

*Engineering Degree in wireless communication*

Tunisia

*Sept. 2017 – Aug. 2020*

- Main courses: Stochastic Processes, Operational Research, Mathematical Optimization, Numerical Analysis, Data Analysis, Machine Learning, Signal Processing, Wireless Communication, Grade: 18/20.

## Publications

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[2] G. Gharsallah and G. Kaddoum, "MVX-ViT: Multimodal Collaborative Perception for 6G V2X Network Management Decisions Using Vision Transformer," in *IEEE Open Journal of the Communications Society*, doi: 10.1109/OJCOMS.2024.3452591 (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*, doi: 10.1109/ACCESS.2024.3460480. [Link]

Bachelor Thesis: G. Gharsallah and Z. Wang, "AI Classifiers Robustness to Adversarial Attacks: Manipulating Output of Classifiers by Small Input Perturbations." DOI: 10.13140/RG.2.2.33337.29286 (2020). [Link]

## Extracurricular Activities

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### IEEE ÉTS Chapter

*Website Manager*

2021

*Montréal, CA*

### Youtube

*Content Creator*

2021

*Montréal, CA*

### Association des Jeunes Polytechniciens

*President*

2018

*Tunisia*

### AmCham EPT Chapter

*Vice President*

2018

*Tunisia*

### WikiStage

*Organization Team Leader*

2017

*Tunisia*

## Awards

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Mitacs Accelerate Fellowship

2022

ÉTS | Exemption from M.Sc. & Ph.D. Tuition Fees

2020/2021

ÉTS | Financially Supported M.Sc. & Ph.D. Scholarship

2020/2021

UCI | Visiting Student Fellowship

2019

Mitacs Globalink Research Award

2019