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## Education

- 2018-2022 **PhD in Electrical Engineering**, *Université de Sherbrooke, Engineering Faculty, Electrical engineering and Computer Engineering Department*,  
*Thesis title: Communication-efficient mobile edge intelligence*  
*Courses: Managing Research and Innovation, Computational neuroscience and applications in information processing. GPA : 4.15/4.3.*
- 2017-2018 **Specialized Graduate Studies**, *Université de Sherbrooke, Engineering Faculty, Electrical engineering and Computer Engineering Department*.  
*Courses: Vehicular networks, Formalizable artificial intelligence, Probabilistic artificial intelligence, Bio-inspired artificial intelligence. GPA : 4.07/4.3*
- 2015-2017 **B.Sc in Software Engineering**, *ENSIAS - Rabat, Morocco* , finished first year with honors, selected in second year for mobility to Canada (covering all studies fees).
- 2013-2015 **Preparatory Classes for Engineering School**, *Lycée Ibn Abdoune- Khouribga, Morocco* , *Mathematics, Physics and Engineering science.*

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## Scholarships and Awards

- Fall 2021 **Leonard De Vinci Medal**, *Université de Sherbrooke*, the highest distinction that the Engineering Faculty awards to students, (1000\$).
- Fall 2021 **Best Paper Award at IEEE LCN 2021**.
- Summer 2019 **Mitacs Acceleration**, (24000\$/year).
- Winter 2019-  
Present **Foreign students fee exemption grant, awarded at home country by merit**, (18,000\$).
- 2017–2018 **Exchange students scholarship, Université de Sherbrooke**, (6000\$).

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## Publications

### Journal Published/Accepted

- Papers [1] **A. Taïk**, Z.Mlika, and S. Cherkaoui “Clustered Vehicular Federated Learning: Process and Optimization”, [Early Access], pp 1-13, in *IEEE Transactions on Intelligent Transportation Systems* (IF:6.49, Q1).
- [2] **A. Taïk**, B.Nour and S. Cherkaoui, “Empowering Prosumer Communities in Smart Grid with Wireless Communications and Federated Edge Learning” in *IEEE Wireless Communications*, vol. 28, no.6, pp. 26-33, December 2021, doi: 10.1109/MWC.017.21001 (IF:11.97, Q1).
- [3] **A. Taïk**, Z.Mlika and S. Cherkaoui, “Data-Aware Device Scheduling for Federated Edge Learning” , *IEEE Transactions on Cognitive Communications and Networking*, doi: 10.1109/TCCN.2021.3100574 (IF:4.34, Q1).

[4] **A. Taïk** and S. Cherkaoui, "Federated Edge Learning: Design Issues and Challenges", in IEEE Network, vol. 35, no. 2, pp. 252-258, March/April 2021, doi: 10.1109/MNET.011.2000478 (IF:10.69,Q1).

Under review [1] **A. Taïk**, A.Abouaomar, and S. Cherkaoui "Green Federated Learning : Models and Protocols ", Under review CRC Press.

[2] A.Abouaomar, A.Filali, **A. Taïk** and S. Cherkaoui "Machine Learning Applications in CR-IoV", Under review CRC Press.

[3] A.Abouaomar\*, **A. Taïk\***, A.Filali\*, and S. Cherkaoui "Federated Learning for RAN Slicing in Beyond 5G Networks", Under review, submitted to IEEE Computational Intelligence Magazine (\*Equal Contribution).

Peer reviewed [1] **A. Taïk**, H.Moudoud, and S. Cherkaoui "Data-quality based device Scheduling for Federated Edge Learning" , IEEE LCN 2021, **Best Paper Award**.

[2] **A. Taïk** and S. Cherkaoui,"Electrical Load Forecasting Using Edge Computing and Federated Learning" , in 2020 IEEE International Conference on Communications (ICC), Jun. 2020, pp. 1–6, doi: 10.1109/ICC40277.2020.9148937.

## Research and Development Projects

Fall 2020 - **Analysis of Mesh Network data in relation to external condition** Trilliant Inc.,  
Now - Exploratory data analysis - Data cleaning and preparation -Analysis of the effect of weather conditions and human activity - Evaluation of different performance metrics in deployed Mesh network .

Summer 2020 **Research Mentor**,  
-Designed research projects for interns. The projects were mainly about on-device computation of recurrent neural networks, fast inference at the edge of the network, and gossip learning.  
-Made research schedule and provided guidance throughout the project.  
-Conducted training and taught basics about artificial neural networks and edge inference techniques.  
Tools : PyTorch, Numpy

Summer 2019 **Design and implementation of an open DaaS data management architecture to facilitate the development of new services using LoRa** Sherbrooke City,  
Comparative study of storage tools and analysis platforms and realization of an end-to-end prototype.

Winter 2018 **Implementation of a management tool and data analysis in the case of smart parking using LoRa technology**  
-Designed the database and insured its accessibility for the mobile application  
-Designed an interactive dashboard for analysis and visualization, Université de Sherbrooke.  
Used tools : Python, Cassandra, LoRa, PyQT5

## Knowledge Area

Programming Python, C  
Languages  
Databases Cassandra, SQL

ML/DS Libraries Pandas, SkLearn, PyTorch, Tensorflow  
Languages French (Proficient), English (Proficient)

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### Additional activities

- 2020 - Now **Journal and conferences review:** *IEEE Internet of Things Journal*, *IEEE Systems Journal*, *IEEE Network*, *IEEE Transactions on Vehicular Technology*, *Springer Nature*, *Computer Networks (Elsevier)*, *Vehicular Communications (Elsevier)*, *IEEE International Conference on Communications (ICC) 2021*.
- 2022- 2024 **ACM N2Women board member**, Membership board.
- 2018- 2021 **Member at Choeur Campus**, Université de Sherbrooke's Choir, Alto I.
- 2019-2020 **UdeS Sponsoring Program**, Accompany and support new international students.
- 2017- 2018 **Member at Zero Waste Committee**, Université de Sherbrooke,  
-Coordination assistant (Winter 2018)  
- Information delegate (Fall 2017).
- 2015- 2017 **Member at CINDH ENSIAS**, ENSIAS's Charity club,  
Information Delegate (2017).