

Mehran Ahadi

Interested in RF Electronics, Antennas, Signal Processing, System-level Software, and Embedded Systems.

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Education

- **Université Laval** QUEBEC, QC
Ph.D. Candidate in Electrical Engineering 2019 - 2024 Expected
 - **Thesis Title:** Design and Development of a Novel Wearable Technology for Vital Signal Monitoring
 - **References:** [Younès Messaddeq, PhD](#) — [Amine Miled, PhD](#) — [Marc-André Dugas, MD](#)
 - **Amirkabir University of Technology — Tehran Polytechnic** TEHRAN
M.Sc. in Photonics Engineering 2016 - 2019
 - **Thesis Title:** Design & Simulation of a Metasurface using Graphene
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Skills

- **Languages:**
 - Full Professional Proficiency in **English:** TOEFL score: **101** 2019
 - Limited Working Proficiency in **French:** CEFR Level: **Intermediate (B1)**
 - Native in **Persian**
 - **RF & Microwave:**
 - **Experiences:** RF System Design, High-Frequency PCBs, Filter Design, Antenna Design, Metamaterials, Frequency Selective Surfaces (FSS), Transmission Lines
 - **Software:** CST Studio Suite, Ansys HFSS, COMSOL EM Simulations, Keysight ADS and RFPro
 - **Hardware:** Vector Network Analyzers, Spectrum Analyzers, RF Signal Generators, High-Frequency Oscilloscopes, Microwave Waveguides & Passive Components
 - **System Design:**
 - **Technologies:**
 - * **Signal Processing:** Real-time Digital Signal Processing, Digital & Analog Filter Design, Cryptography (RSA, AES, Hashing)
 - * **Embedded:** Zephyr RTOS, FPGA, ARM Cortex-M, NRF5x MCU Family, Raspberry Pi
 - * **Protocols:** Bluetooth LE (GATT Protocol), VoIP Protocol (Gateways, SIP, Clients), IP Network
 - * **Neural Networks:** TensorFlow, PyTorch
 - * **Computer Vision:** OpenCV
 - **Programming Languages:** C, C++, Python, Java, Kotlin, MATLAB, VHDL, Javascript, PHP
 - **Operating Systems:** GNU/Linux (*nix), Microsoft Windows
 - **Software & DKs:** MATLAB and Simulink, Altium Designer, Keysight ADS, Xilinx Vivado, Xilinx Vitis, Xilinx ISE & EDK, nRF Connect SDK, Android SDK, Solidworks
 - **Others:**
 - **Software Dev:** Qt Framework, Android SDK, Node.js, Apache Webserver, Relational DBs (MySQL and PostgreSQL), NoSQL DBs (Redis), RESTful and Websocket APIs
 - **Tools:** Bash, Git, Mercurial, Virtualization
 - **Type Setting:** L^AT_EX, Markdown (MD), Microsoft Office, HTML+CSS
 - **Graphics:** Adobe Photoshop, DaVinci Resolve
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Publications

1. **M. Ahadi**, A. Miled, M.-A. Dugas and Y. Messaddeq, "Single Antenna Bio-Sensing for Non-invasive Respiratory and Cardiac Activity Monitoring," in IEEE Sensors Journal, doi: 10.1109/JSEN.2024.3484459.
 2. **M. Ahadi**, A. Miled, M.-A. Dugas, and Y. Messaddeq, "Validation Of A Novel Respiratory Monitoring Method and System Based on Antenna Sensors and Optical Tracking of Chest Motion," *2024 46th Annual International Conference of the IEEE Engineering in Medicine & Biology Society (EMBC)*, Orlando, FL, USA, 2024; (Accepted, To be published)
 3. **M. Ahadi**, M. Roudjane, M.-A. Dugas, A. Miled, and Y. Messaddeq, "Wearable Sensor Based on Flexible Sinusoidal Antenna for Strain Sensing Applications," *Sensors*, vol. 22, no. 11, p. 4069, May 2022, doi: 10.3390/s22114069.
 4. H. Abed, S. Bellemare-Rousseau, B. Bélanger-Huot, **M. Ahadi**, É. Drouin, M. Roudjane, M. Dugas, A. Miled, Y. Messaddeq, "A Wire-free and Fiber-Based Smart T-Shirt for Real-Time Breathing Rate Monitoring," in IEEE Sensors Journal, 2021. doi: 10.1109/JSEN.2021.3139032.
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Experiences

- **Ph.D. Candidate: COPL / LABioTRON**
Université Laval — Quebec, QC *2019 - 2024 Expected*
 - Focused on Novel Technologies of Human Vital Signal Monitoring and Processing, comprised of:
(1) Antenna Design, (2) RF Circuits & Systems Design, (3) Real-time Signal Processing, and
(4) Embedded Systems Design.
 - **Lab2Market Validate – 2024 Quebec Cohort**
V1 Studio — Montreal, QC *Fall 2024*
 - A market research and validation program with a highly competitive selection process, supporting the commercialization of the technology I developed during my PhD studies.
 - **Research Assistant: Centre hospitalier de l'Université Laval (CHUL)**
CHU de Québec — Université Laval — Quebec, QC *2022 - 2023*
 - Signal Processing and Analysis of Local Field Potential (LFP) brain signals recorded from rodents
 - **Web Developer / Designer**
Université Laval — Quebec, QC *2021 - 2022*
 - The official homepages of COPL department of Université Laval, and YMLab Research Group
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Honors and Awards

- Business Strategy Internship (BSI) Award — Mitacs and V1 Studio *Fall 2024*
 - Programme de soutien aux organismes de recherche et d'innovation (PSO) — Soutien aux projets *2021*
Ministère de l'Économie et de l'Innovation — Gouvernement du Québec
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Certifications

- **Keysight Pathwave ADS EM Advanced** *2021*
Keysight & CMC Microsystems
 - **COMSOL Low- and High-frequency Electromagnetics Modeling** *2020*
COMSOL & CMC Microsystems — Workshop held at University of Waterloo
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Other Interests

DIYs, Hiking, Swimming, Online Gaming

Last Updated: Nov 2024