

# Abdelrahman Zayed

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7254, Drolet, Montréal, Quebec, Canada

## Education

Sep 2020-  
present

PHD IN COMPUTER SCIENCE.  
**QUEBEC ARTIFICIAL INTELLIGENCE INSTITUTE (MILA), MONTRÉAL, CANADA.**

- Cumulative GPA : 4.0/4.0
- **Supervisor** : Professor Sarath Chandar
- **Research interests** : Natural language processing, causal inference, fairness, and medical imaging.

May 2018-  
April 2020

MASTER OF SCIENCE IN ELECTRICAL AND COMPUTER ENGINEERING.  
**CONCORDIA UNIVERSITY, MONTRÉAL, CANADA.**

- Cumulative GPA : 4.2/4.2
- **Supervisor** : Professor Hassan Rivaz

July 2016

BACHELOR OF SCIENCE IN ELECTRICAL ENGINEERING.  
**CAIRO UNIVERSITY, GIZA, EGYPT.**

- Summa Cum Laude
- Cumulative GPA : 3.92/4.0 (Top 3 %)

## Industrial Experience

May 2021-  
present

**GRADUATE RESEARCH ASSISTANT, MICROSOFT.**  
MONTRÉAL, CANADA.

- **Supervisor** : Samira Shabanian
- Working on analyzing and improving gender bias mitigation methods in text classification.

## Academic Experience

May 2020-  
Aug 2020

**RESEARCH ASSISTANT, QUEBEC ARTIFICIAL INTELLIGENCE INSTITUTE (MILA).**  
MONTRÉAL, CANADA.

- **Supervisor** : Professor Sarath Chandar
- Worked on the application of constraints to the output of neural networks.

- May 2018-April 2020**      **RESEARCH ASSISTANT**, IMAGE PROCESSING AND CHARACTERIZATION OF TISSUE LABORATORY.  
PERFORM CENTRE, MONTRÉAL, CANADA.
- **Supervisor** : Professor Hassan Rivaz
  - Applied machine learning techniques in ultrasound imaging for detecting cancer tumours.
- May 2019-Jan 2020**      **RESEARCH ASSISTANT**, NEURAL ABC LABORATORY.  
CONCORDIA UNIVERSITY, MONTRÉAL, CANADA.
- **Supervisor** : Professor Christopher J. Steele
  - Developed a normative model of the structural connections of the human brain, that can be used to predict the network effects of brain lesions.
- Oct 2016-Dec 2016**      **RESEARCH ASSISTANT**, CENTER OF WIRELESS STUDIES.  
CAIRO UNIVERSITY, GIZA, EGYPT.
- **Supervisor** : Professor Mohamed Khairy
  - Worked in optical wireless communications in 5G networks.

## Scholarships and Awards

- 2020-2021**      -GRADUATE RESEARCH ASSISTANTSHIP (25,000 \$ PER YEAR).  
POLYTECHNIQUE MONTRÉAL, MONTRÉAL, CANADA.
- 2019**      -QBIN SCHOLARSHIP FOR MASTER'S STUDENTS (5,000 \$).  
THE QUEBEC BIO-IMAGING NETWORK (QBIN), MONTRÉAL, CANADA.
- 2019**      -CAE SCHOLARSHIP IN ENGINEERING EXCELLENCE (2,434 \$).  
CONCORDIA UNIVERSITY, CANADA.
- 2018-2020**      -GRADUATE RESEARCH ASSISTANTSHIP (15,000 \$ PER YEAR).  
CONCORDIA UNIVERSITY, MONTRÉAL, CANADA.
- 2018**      -MERIT SCHOLARSHIP (5,000 \$).  
CONCORDIA UNIVERSITY, MONTRÉAL, CANADA.
- 2011-2016**      -MEDAL OF DISTINCTION WITH HONOR IN UNDERGRADUATE STUDIES.  
CAIRO UNIVERSITY, GIZA, EGYPT.

## Teaching

- Fall 2016**      **TEACHING ASSISTANT**.  
CAIRO UNIVERSITY, GIZA, EGYPT.
- Conducted tutorials and graded exams for an undergraduate course in Analog Communications.
- Fall 2020**      **TEACHING ASSISTANT**.  
POLYTECHNIQUE MONTRÉAL, CANADA.
- Conducted tutorials and graded assignments/exams for an undergraduate/graduate course in machine learning.
- Fall 2021**      **LEAD TEACHING ASSISTANT**.  
POLYTECHNIQUE MONTRÉAL, CANADA.
- Conducted tutorials and graded assignments/exams for an undergraduate/graduate course in machine learning.

## Publications

1-**A. ZAYED** AND H. RIVAZ “FAST STRAIN ESTIMATION AND FRAME SELECTION IN ULTRASOUND ELASTOGRAPHY USING MACHINE LEARNING” - IEEE TRANSACTIONS ON ULTRASONICS, FERROELECTRICS, AND FREQUENCY CONTROL (TUFFC), 12 MAY 2020.

2-**A. ZAYED**, Y. ITURRIA-MEDINA, A. VILLRINGER, B. SEHM AND C. STEELE “RAPID QUANTIFICATION OF WHITE MATTER DISCONNECTION IN THE HUMAN BRAIN” - IEEE EMBC 2020, 42ND ANNUAL INTERNATIONAL CONFERENCE OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY.

3-**A. ZAYED**, G. CLOUTIER AND H. RIVAZ “AUTOMATIC FRAME SELECTION USING CNN IN ULTRASOUND ELASTOGRAPHY” - IEEE EMBC 2020, 42ND ANNUAL INTERNATIONAL CONFERENCE OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY.

4-**A. ZAYED** AND H. RIVAZ “AUTOMATIC FRAME SELECTION USING MLP NEURAL NETWORK IN ULTRASOUND ELASTOGRAPHY” - ICIAR 2019, 16TH INTERNATIONAL CONFERENCE ON IMAGE ANALYSIS AND RECOGNITION.

5-**A. ZAYED** AND H. RIVAZ “FAST APPROXIMATE TIME-DELAY ESTIMATION IN ULTRASOUND ELASTOGRAPHY USING PRINCIPAL COMPONENT ANALYSIS” - IEEE EMBC 2019, 41ST ANNUAL INTERNATIONAL CONFERENCE OF THE IEEE ENGINEERING IN MEDICINE AND BIOLOGY SOCIETY.

## Review

IEEE TRANSACTIONS ON MEDICAL IMAGING (TMI), 2020 (IMPACT FACTOR : 10.72).

## Presentations and Posters

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|---------------------|---|
| <b>Dec 11, 2020</b> | 1-MOSTAFA ELARABY, GUY WOLF AND MARGARIDA CARVALHOY “IDENTIFYING EFFICIENT SUB-NETWORKS USING MIXED INTEGER PROGRAMMING”.<br>CONFERENCE ON NEURAL INFORMATION PROCESSING SYSTEMS (NEURIPS).   |
| <b>Feb 7, 2020</b>  | 2- <b>A. ZAYED</b> , Y. ITURRIA-MEDINA, A. VILLRINGER, B. SEHM AND C. STEELE “QUATIFYING WHITE MATTER DISCONNECTION IN PATIENT POPULATIONS”.<br>ANNUAL QBIN SCIENTIFIC DAY, MONTRÉAL, CANADA. |
| <b>May 10, 2019</b> | 3- <b>A. ZAYED</b> AND H. RIVAZ “AUTOMATIC FRAME SELECTION USING MLP NEURAL NETWORK IN ULTRASOUND ELASTOGRAPHY” .<br>6TH ANNUAL PERFORM CENTRE RESEARCH CONFERENCE, MONTRÉAL, CANADA.         |
| <b>May 9, 2019</b>  | 4- <b>A. ZAYED</b> AND H. RIVAZ “AUTOMATIC FRAME SELECTION USING MLP NEURAL NETWORK IN ULTRASOUND ELASTOGRAPHY”.<br>COLLOQUE ANNUEL RESMIQ, CONCORDIA UNIVERSITY, MONTRÉAL, CANADA.           |

## Community Service

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| <b>June 2019-<br/>Sep 2019</b> | <b>STUDENT VOLUNTEER</b> , QUEBEC BIO-IMAGING NETWORK (QBIN).<br>MONTRÉAL, CANADA. |
| <b>July 2020-<br/>Aug 2020</b> | <b>VOLUNTEER</b> AT MARCHÉ AHUNTSIC-CARTIERVILLE.<br>MONTREAL, CANADA.             |
| <b>July 2019-<br/>Aug 2019</b> | <b>VOLUNTEER</b> AT LE MAGASIN DU CHAÎNON.<br>MONTRÉAL, CANADA.                    |

## Languages

-ENGLISH, FRENCH AND ARABIC.

## Skills and Hobbies

PYTHON (PYTORCH/TENSORFLOW)-MATLAB-C/C++-JAVA.  
WINDOWS OPERATING SYSTEM-LINUX OPERATING SYSTEM.  
PLAYING PIANO.