



# ESSAM SEDDIK, Ph.D.

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## Work Experience

|   |                |
|---|----------------|
| <b>Head of Department (HOD)</b> – Arab Academy for Science & Tech. [AASTMT University, Egypt]<br>Mechatronics Engineering Department at Port-Said Branch [Undergrad + Postgrad]   | 2023 – Present |
| <b>Reinforcement Learning (RL) Instructor</b> – Information Technology Institute [ITI, Egypt]   | 2022 – Present |
| <b>Assistant Professor</b> – Arab Academy for Science & Tech. [AASTMT University, Egypt] <ul style="list-style-type: none"><li>Teaching Mechatronics – College of Engineering &amp; Technology (Alexandria Campus)</li><li>Teaching Python, ML, DL, RL, DS - College of Artificial Intelligence (AI-Alamein Campus)</li></ul>   | 2021 – Present |
| <b>Research Assistant (RA)</b> – McMaster University, Canada <ul style="list-style-type: none"><li>Research Collaboration with FORD Co.<ul style="list-style-type: none"><li>Developed an assessment solution for fully electric 2019 Ford Focus batteries.</li></ul></li><li>Research Collaboration with GEOTAB Co.<ul style="list-style-type: none"><li>Developed an AI-based battery fault prediction model for 12v delivery trucks.</li></ul></li><li>Research Collaboration with D&amp;V ELECTRONICS Co.<ul style="list-style-type: none"><li>Developed an AI-based FDD software for end-of-line electric motor testers.</li></ul></li><li>Taught mechatronics and robotics to undergraduate Mechanical Eng. students.</li></ul> | 2017 - 2021    |
| <b>Big Data Scientist</b> - GEOTAB Co., Canada<br>GEOTAB is a global leader in connected-vehicle telematics, collecting billions of data points daily. <ul style="list-style-type: none"><li>Reduced the world's 2nd largest fleet battery failure expenses by 50% (\$1M):</li><li>Created GEOTAB's public "Fuel Station Metrics" dataset:<br/><a href="https://www.geotab.com/blog/geotab-ignition/">https://www.geotab.com/blog/geotab-ignition/</a></li><li>Data Analysis &amp; Machine Learning based solutions.</li></ul>  | 2017 - 2019    |
| <b>Assistant Manager of the Mech. Team</b> – McMaster EcoCar3, Canada<br>4-year Adv. Vehicle Technology Student Competition [by General Motors - USA]<br>Mission: Converted a brand new 2015 Chevrolet Camaro to a hybrid vehicle. <ul style="list-style-type: none"><li>Co-managed the mechanical team of 26 engineering students and project managers.</li><li>Team won the 3rd place award over 16 universities in North America.</li></ul>  | 2015 - 2016    |
| <b>Assistant Lecturer</b> – Arab Academy for Science & Tech. [AASTMT University] <ul style="list-style-type: none"><li>Taught robotics, automotive, mechanical design, and Computer Aided Drawing (CAD).</li><li>Head of scheduling &amp; examination teams, serving 1,500 students &amp; 60 faculty members.</li></ul>   | 2010 - 2014    |

## Education

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|--|-------------|
| <b>Doctor of Philosophy</b> [Artificial Intelligence in Mechatronics] - McMaster University, Canada<br>Cloud-based advanced pre-processing of Deep Learning-based Fault Prediction of ICE & batteries. | 2017 - 2021 |
| <b>Master of Science</b> [Artificial Intelligence] - McMaster University, Canada<br>Machine Learning based Fault detection and identification of vehicle starters and alternators.                     | 2014 - 2016 |
| <b>Master of Science</b> [Mechatronics Engineering] – AAST University, Egypt<br>Replacement of standard ICE camshaft with an electromagnetic actuator, which improved the fuel consumption by 16%.     | 2011 - 2013 |
| <b>Bachelor of Science</b> [Mechatronics Engineering] – AAST University, Egypt<br>Fully Automated Wheelchair for physically disabled and visually impaired people [Grade: A+]                          | 2005 - 2010 |
| <b>High School</b> [French Education] - Collège Saint-Marc, Egypt  | 1992 – 2005 |

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|------------------------|--|--------------------------------------|--|
| <b>Languages</b>       | English (Fluent), Arabic (Native), French (Good)   |                                      |  |
| <b>Awards</b>          | <ul style="list-style-type: none"> <li>• \$25,000 Research grant – The Canadian Government (NSERC)</li> <li>• \$120,000 PhD Scholarship – McMaster University.</li> <li>• \$60,000 Masters Scholarship – McMaster University.</li> <li>• Best Teaching Assistant Award [out of 120 TAs] – AAST Faculty of Engineering.</li> <li>• 64,000 EGP Masters Scholarship – AAST University.</li> </ul>   | 2017<br>2016<br>2014<br>2013<br>2011 |  |
| <b>Software Skills</b> | <ul style="list-style-type: none"> <li>• PYTHON</li> <li>• SQL</li> <li>• Data Science (DS)</li> <li>• Machine Learning (ML)</li> <li>• Deep Learning (DL)</li> <li>• Reinforcement Learning (RL)</li> <li>• Robotics Operating System (ROS)</li> <li>• MATLAB (+ Simulink)</li> </ul>   |                                      |  |
| <b>Volunteer</b>       | <ul style="list-style-type: none"> <li>• Mentor at RoboCupJunior Egypt Competition 2023: <a href="http://www.rcjegypt.org">www.rcjegypt.org</a></li> <li>• SafetyNet [Oakville, Ontario, Canada] <ul style="list-style-type: none"> <li>○ English instructor for Arab refugees who struggled with English classes.</li> </ul> </li> <li>• GEOTAB Co. [Oakville, Ontario, Canada] <ul style="list-style-type: none"> <li>○ Raised \$5,000+ worth of donations for Oakville and Waterloo food banks.</li> <li>○ Elected Brand Ambassador (team building activities and employee outings).</li> </ul> </li> </ul> |                                      |  |