Abdel Gafoor Haddad
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EDUCATION

- Ph.D. in Engineering (Robotics), Khalifa University (KU), **GPA: 4.0**, in progress.

- M.Sc. in Electrical and Computer Engineering, KU, **GPA: 4.0**, May 2020.
  Specialization track: Robotics, controls, and autonomous systems.

- B.Sc. in Electrical Engineering, American University of Sharjah (AUS), **GPA: 3.94**, May 2018.

PUBLICATIONS

[J1] A. Haddad, I. Boiko, and Y. Zweiri, "Reinforcement learning generalization for nonlinear systems through dual-scale homogeneity transformations," *IEEE Transactions on Control Systems Technology.*, under review.

[C1] A. Haddad, M. Mohiuddin, I. Boiko, and Y. Zweiri, "Fuzzy ensembles of reinforcement learning policies for robotic systems with varied parameters," ICRA 2024, under review.

[C2] M. Mohiuddin, A. Haddad, I. Boiko, and Y. Zweiri, "Zero-shot sim2real transfer of deep reinforcement learning controller for tower crane system," IFAC World Congress, 2023.

[J2] A. Haddad, I. Boiko, and A. Al-Durra, "Oxygen-sensor-based 2-DOF PI air-flow controller of fuel cell system," *Journal of the Franklin Institute*, under review.

[J3] A. Haddad, I. Boiko, and A. Al-Durra, "Air-flow control in fuel cells using delay-based load governor and feedforward augmented dynamic inversion," *ISA Transactions*. vol. 128, pp. 477-487, 2022.

[J4] A. Haddad, A. Al-Durra, and I. Boiko, "Design of genetic programming control algorithm for low-temperature PEM fuel cell," *Frontiers in Energy Research*, vol. 8, pp. 375-400, 2021.

[C3] A. Haddad, M. Humais, N. Werghi, and A. Shoufan, "Long-range visual UAV detection and tracking system," The 46th Annual Conference of the IEEE Industrial Electronics Society, 2020, pp. 638-643.

[C4] A. Haddad, M. Humais, and A. Al-Durra, "Investigation of different controllers and observers combinations for grid-tied LCL filter," The 28th International Symposium on Industrial Electronics, 2019, pp. 896-901.

[C5] A. Haddad, K. Al-Wahedi, and A. Al-Durra, "PSO-based LQR design for grid-connected LCL filter with THD constraints," The 45th Annual Conference of the IEEE Industrial Electronics Society, 2019, pp. 1962-1966.

[C6] A. Haddad, A. Takiddeen, A. Obeid, and A. Sleptchenko, "Traffic optimization by simultaneous control of vehicles speeds and routes," The 6th International Conference on Industrial Engineering and Applications, 2019, pp. 786-790.

[C7] H. Usman, A. Haddad, H. Rehman, and S. Mukhopadyay, "Comparison of PI and FOPI based voltage and current controlled DC motor drive system," The International Aegean Conference on Electrical Machines and Power Electronics, 2019, pp. 139-142.

[C8] A. Haddad and R. Dhaouadi, "Modeling and analysis of PV soiling and its effect on the transmittance of solar radiation", Advances in Eng. Technology & Sciences Multi-Conferences, 2018, pp. 1-5.

SOFTWARE

MATLAB	C++	DSpace	SOLIDWORKS	PSpice
Simulink	Python	LabVIEW	ROS	PSIM

AWARDS

- 1st place winner in Pioneers 4.0 Hackathon, MoIAT and EDGE   Oct. 26, 2023
- Top 5% Journal Publication Award, KU   Dec. 8, 2022
- 2nd place winner in Abu Dhabi Digital Authority Hackathon   Nov. 18, 2019
- Chancellor gold medal for academic excellence, AUS   Nov. 2, 2017
- 2nd place winner in Microelectronics Olympiad, AUS   Sept. 24, 2016
- Petrofac Endowment Scholarship, AUS   June 2016 – May 2018
- Sheikh Rashid Al Nuaimi Endowed Scholarship, AUS   Sept. 2015 – May 2018
- Merit Scholarship, AUS   Sept. 2014 – May 2018
- 1st place winner in Introduction to Engineering competition, AUS   Dec. 14, 2014

PROJECTS

- Person detection and tracking in crowds by drones   Nov. 2023
- Genetic-programming-based controller for fuel cell systems   May 2021
- Optical drone detection and tracking system   Jan. 2020
- Animal visual tagging system   Nov. 2019
- Solar-powered quadrotor   May 2018
- Autonomous sumo robot   April 2018

CERTIFIED COURSES

- Kinematics: Describing the Motions of Spacecraft (view certificate)
- Control of Nonlinear Spacecraft Attitude Motion (view certificate)
- Fundamentals of Reinforcement Learning (view certificate)
- Using Python for Research (view certificate)
- Using GPUs to Scale and Speed-up Deep Learning (view certificate)
- Applied Deep Learning Capstone Project (view certificate)
- Deep Learning Fundamentals with Keras (view certificate)
- Deep Learning with Python and PyTorch (view certificate)
- Deep Learning with Tensorflow (view certificate)
- Fundamentals of Neuroscience, Part 1: The Electrical Properties of the Neuron (view certificate)
- Fundamentals of Neuroscience, Part 2: Neurons and Networks (view certificate)
- Fundamentals of Neuroscience, Part 3: The Brain (view certificate)
- Introduction to Self-Driving Cars (view certificate)
- State Estimation and Localization for Self-Driving Cars (view certificate)
- Visual Perception for Self-Driving Cars (view certificate)
- Motion Planning for Self-Driving Cars (view certificate)
- Robotics Foundations I - Robot Modeling (view certificate)
- Robotics Foundations II - Robot Control (view certificate)
- Control of Mobile Robots (view certificate)

MEMBERSHIPS

- Member of the Institute of Electrical and Electronics Engineers (IEEE) since Nov. 2015.
- Member of the IEEE Industrial Electronics Society (IES) since April 2019.

LANGUAGES

English | Fluent   Arabic | Fluent