

Dr. Abdelrahman Morsi



Curriculum Vitae

Dr. Abdelrahman Ahmed Ali Morsi
Assistant Professor,
Electrical Engineering Department,
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Personal Data

Date of Birth November, 11, 1989
Place of Birth Assiut, Egypt
Nationality Egyptian
Marital Status Married
Mother Language Arabic

Education

Doctor of Philosophy Mechatronics Engineering (Control Engineering)
9/2018 - 12/2021 Mechatronics and Robotics Engineering Department,
School of Innovative Design Engineering, E-JUST, Alexandria, Egypt
Title: *Efficient Model Predictive Control Based on Linear Parameter-Varying Representations with Application to Magnetic Bearing Systems*

Master of Science Electrical Engineering (Control Engineering)
10/2011 - 6/2016 Electrical Engineering Department,
Faculty of Engineering, Assiut University, Assiut, Egypt
Title: *Wind Turbine Control: A Model Predictive Control based on Linear Parameter-Varying Models*

Bachelor of Science Electrical Engineering (Computers and Systems)
9/2006 - 6/2011 Electrical Engineering Department,
Faculty of Engineering, Assiut University, Assiut, Egypt
Project Title: *Design and Fabrication of Electromechanical Unit of Mass-Spring-Damper System*
Project Degree: **Distinction**

Skills

Development Software MATLAB, Simulink, C++, Assembly, Fortran
Office/Publication L^AT_EX, Beamer (L^AT_EX), Adobe Acrobat, Microsoft Office
Languages Arabic (native), English (very good)

Experience

Background

- 2011 - 2018 During my academic years in the Computers and Systems Section, Electrical Engineering Department, Faculty of Engineering, Assiut University, I have gained more knowledge about different types of signal and systems, automatic control theorems, digital control design, process control, digital circuits design and computer organization and architecture.
- 2018 - 2021 During my study in the Mechatronics and Robotics Engineering Department, School of Innovative Design Engineering, E-JUST, I have studied intelligent control systems, advanced mechatronics systems design, advanced topics in mechanical systems design and advanced micro electro-mechanical systems.

Professional Experience

- Demonstrator Electrical Engineering Department,
10/2011 - 6/2016 Faculty of Engineering,
Assiut University, Assiut, Egypt
- Assistant Lecturer Electrical Engineering Department,
6/2016 - 9/2018 Faculty of Engineering,
Assiut University, Assiut, Egypt
- PhD Student Mechatronics and Robotics Engineering Department,
9/2018 - 12/2021 School of Innovative Design Engineering,
E-JUST, Alexandria, Egypt
- Assistant Professor Electrical Engineering Department,
12/2021 - present Faculty of Engineering,
Assiut University, Assiut, Egypt

Research Interests

- Control Theory Linear/nonlinear systems theory, Linear parameter-varying (LPV) systems, H_∞ control, Robust and optimal control, Model predictive control (MPC)
- Applications Mass-spring-damper system, Wind turbine control, Magnetic levitation control, Magnetic bearing system

Teaching Experience

- 2011 - 2017 Computer Organization Lab
- 2011 - 2018 Automatic Control I, Automatic Control II, Digital Control, C++
- 2013 - 2014 Micro-Processor Lab
- 2013 - 2018 Digital Circuits Lab
- 2015 - 2018 Signal and Systems, Control Using MATLAB, Programmable Logic Controllers (PLC)
- 2016 - 2018 Neural Network, Computer Architecture

Co-Supervising Research Projects

- 2014 GSM-Based Smart UAV Quad Copter Remote Control
- 2015 Design and Implementation of Greenhouse System using WinCC Flexible
- 2016 Development of an Autonomous Balancing Robot based on Advanced Control Techniques
- 2017 Servo based CNC Machine

Awards

9/2018 - 12/2021 PhD scholarship award funded by the Ministry of Higher Education and Scientific Research, Egypt

Referees

1. Prof. Hassen Taher Dorrah
Electrical Engineering Department, Faculty of Engineering,
Cairo University, Cairo, Egypt
E-mail: [dorrahht@aol.com](mailto:dorraht@aol.com)
2. Prof. Mohamed Hussein Amin
Electrical Engineering Department, Faculty of Engineering,
Assiut University, Assiut, Egypt
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3. Prof. Abdelfatah Mahmoud Mohamed
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4. Prof. Hossam Eldin Mahmoud Seddik Abbas
Electrical Engineering Department, Faculty of Engineering,
Assiut University, Assiut, Egypt
E-mail: hossam.abbas@aun.edu.eg

Publications

1. A. Morsi, H. S. Abbas, and A. M. Mohamed, "Model predictive control of a wind turbine based on linear parameter-varying models," in *Proc. of the IEEE Conference on Control Applications (CCA)*, Sydney, NSW, Australia, Sep. 2015, pp. 318-323.
2. A. Morsi, H. S. Abbas, and A. M. Mohamed, "Control of a wind turbine using model-based predictive control," in *Proc. of the International Conference of Engineering Science and Applications (ICESA)*, Aswan, Egypt, Jan. 2016, pp. 262-267.
3. A. Morsi, H. S. Abbas, and A. M. Mohamed, "Wind turbine control based on a modified model predictive control scheme for linear parameter-varying systems," *IET Control Theory & Applications*, vol. 11, no. 17, pp. 3056-3068, Nov. 2017.
4. A. Morsi, H. S. Abbas, S. M. Ahmed, and A. M. Mohamed, "Model predictive control for an active magnetic bearing system," in *Proc. of the IEEE 7th International Conference on Industrial Engineering and Applications (ICIEA)*, Bangkok, Thailand, Apr. 2020, pp. 715-720.
5. A. Morsi, H. S. Abbas, S. M. Ahmed, and A. M. Mohamed, "Model predictive control based on linear parameter-varying models of active magnetic bearing systems," *IEEE Access*, vol. 9, pp. 23633-23647, Feb. 2021.
6. A. Morsi, H. S. Abbas, S. M. Ahmed, and A. M. Mohamed, "Imbalance compensation of active magnetic bearing systems using model predictive control based on linear parameter-varying models," *Journal of Vibration and Control*, p. 10775463221099074, May. 2022.