Ali Wadi

Teaching/Research Assitant

American University of Sharjah

Mechanical Engineering
Sharjah/Abu Dhabi
UAE
aliwadi94@gmail.edu
ali94wadi.github.io

- I am a highly-enthusiastic published scholar with a knack for technology, research, and everything robotics!
- I am in the look out for challenges where I can utilize my diverse skill set in Mechatronics & Mechanical Engineering in tackling relevant and interesting projects
- I took part in a handfull of research ventures where I led the research effort and performed the required experimentation in the fields of: Nonlinear Dynamics, Control, Chemotheraputic Drug Delivery Systems, Tribology, Parameter Identification, Modeling, Estimation Theory, & Optimization.

Education

M.Sc. Mechanical Engineering, American University of Sharjah, UAE
2015→2017 Thesis: Modeling and Guidnce of an Underactuated Autonomous Underwater Vehicle *GPA: 3.71*

B.Sc. Mechanical Engineering, American University of Sharjah, UAE
2011→2015 *Cum Laude Honors.*

Experience

Employment

American University of Sharjah
Jan 2018→Present
Sharjah, UAE

Laboratory Instructor.
- Instructing & grading
- Preparing student handouts and tutorials and teaching material.

American University of Sharjah
Jan 2016→Dec 2017
Sharjah, UAE

Teaching & Research Assistant.
- Instructing & grading undergraduate and graduate courses, recitations & laboratories.
- Preparing student handouts and tutorials and teaching material.
- Management of the student database online system.

Khatib & Alami
Sep→Dec 2015
Abu Dhabi, UAE

Trainee Inspection Engineer. Project: Break Water Fairmont hotel, Abu Dhabi.
- Was resposible for daily inspection works involving HVAC chilled water system, water supply/drainage, and firefighting installations.
- Processed contractor submittals, inspection reports, and information requests.

Al Bayan Engineering Consultants
Aug→Sep 2015
Abu Dhabi, UAE

Engineering Intern.
- Introduced to the process through which construction works happen.
- Gained field experience with HVAC system installation and design.

Teaching

Courses & Labs
2015 → 2018

I took part in the instruction of the following list of undergraduate and graduate courses as a Graduate Teaching Assistant:

– Statics & Dynamics	– Fluid Mechanics	– Thermodynamics
– Dynamic & Control Systems	– Finite Element Analysis	– Thermo-fluids Laboratory
– Real-time Robotics	– Simulation & Modeling	

Extracurricular

GSA Board Member
2016→2017
- Representing the graduate student body on a college-level
- Organizating workshops & events for the graduate student body

Graduate Student
2015→2017
- Helping with the supervision of undergraduate capstone design projects
- Helped with the organization the 10^{th} ISMA conference held in AUS (ISMA '15)

Certifications & Honors

Engineer in Training Certification
July 2015

Passed the *Fundamentals of Engineering (FE) Exam* in the Mechanical Engineering discipline.
Verification Link: https://account.ncees.org/rn/1601398-827033-ff3ba5f

updated December 2017

Computing

I am growing to become an active developer and maintainer of several scientific computing packages. See my github profile (http://github.com/ali94wadi) for details.

Major Software Projects

AUV-ROS-Package 2017→Present
A stack of packages to provide funcitonality for a RaspberryPi-powered Autonomous Underwater Vehicle. Source code to be published in Matlab and Python post thesis publishing.

V-REP/Gazebo-AUV 2017→Present
A MATLAB-integrated ROS package to provide a realistic hydrodynamic environment simulation for the testing purposes of AUV-centered algorithms.

Various Sensor Libraries 2016→Present
I have developed a number of libraries to interface with an array of different sensors. Most of the libraries are designed around LabVIEW, but python libraries were also developed.

Skills

- Expert in MATLAB/Simulink. Good in the Python Language as well as with LabVIEW. Experience writing C, XML.
- Experience with a variety of tools and languages, including bash, LaTeX, HTML, Git, Linux, virtual machines, & the Robot Operating System.
- Experience with Finite Element Analysis modelling software, including the ANSYS; COMSOL.
- Experience with 3D modeling software, including AutoCAD, Inventor.
- Experience with Multibody Dynamics modeling software, including ADAMS, Gazebo, and V-REP.

Publications

2017

[1] A. Wadi *et al.* *Identification of the Uncertainty Structure to Estimate the Acoustic Release of Chemotherapeutics from Polymeric Micelles.* IEEE Transactions on NanoBioscience, DOI: 10.1109/TNB.2017.2736021

[2] A. Wadi *et al.* *Dynamic Analysis of the Tilted Furuta Pendulum.* MATEC Web of Conferences, Denmark, 14 April 2017 (paper no. 200). DOI: https://doi.org/10.1051/matecconf/201710402011

[3] A. Wadi *et al.* *Modeling and System Identification of an Autonomous Underwater Vehicle.* International Symposium for Mechatronics and its Applications, DOI: Not Indexed Yet

[4] A. Wadi *et al.* *Nonlinear Sliding Mode Control of The Furuta Pendulum.* International Symposium for Mechatronics and its Applications, DOI: Not Indexed Yet

Under Review

[5] A. Wadi *et al.* *Bias-Robust Estimation of the Acoustic Release of Chemotherapeutics from Liposomes.* Colloids and Surfaces.

Forthcoming

[6] A. Wadi *et al.* *A Novel Disturbance-Robust Adaptive Trajectory Tracking controller for a Class of Underactuated Underwater Vehicles.* Simulation Modeling Practice and Theory, In preparation November 2017