ABDULLAH ALI

Aerospace Engineer

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Research Engineer
Abu Dhabi, UAE
CENTER FOR ARTIFICIAL INTELLIGENCE AND ROBOTICS *03/2023 - Current*

- Working on Aerial Omnidirectional manipulators that have independent translational and rotational DOFs
- Working robotic artificial limbs and using AI to control them with brain signals
- Providing support to the ongoing projects by designing and manufacturing the needed setups.

Visiting Researcher
Abu Dhabi, UAE
KU CENTER FOR AUTONOMOUS ROBOTIC SYSTEMS *10/2022 - 12/2022*

- Worked on the Houbara project which aimed to create a bird robot to interactively monitor the Houbara birds.

Space Systems Engineer
Abu Dhabi, UAE
YAHSAT SPACE LAB-KHALIFA UNIVERSITY *01/2021 - 07/2022*

- Co-operated with a 7 MSc students to perform the mission concept revirew of a 6U CubeSat with On-board micro propulsion.
- Sized the ADCS for the 6U CubeSAT and analyzed the expected disturbances.
- Studied the ADCS performance along with the propulsion system to perform orbital maneuvers.
- Performed the comparative analysis required to select the ADCS from the components off the shelf.

Enterpreneur and Founder
Abu Dhabi, UAE
CUBETUMBLE *06/2022 - 12/2022*

- A newly found startup that offers solutions for CubeSats' ADCS testing.
- Mentored by Khalifa Innovation Center (KIC).

Aircraft Designer - Internship
Cairo, Egypt
ARAB ORGANIZATION FOR INDUSTRIALIZATION *06/2019 - 09/2019*

- Designed the planform and stability response for a fixed-wing UAV.
- Carried on the drag analysis and calculated the needed thrust for the mission.
- Designed and manufactured a 500g fiber glass wing and a 200g fiber glass tail

Junior Teaching assistant
Cairo, Egypt
UNIVERSITY OF SCIENCE AND TECHNOLOGY - ZEWAIL CITY *Spring 2015*

- Course: Modelling and Linear Control

ABOUT ME

Aerospace Engineer, Robotics, Aircraft designer, ADCS proficient, Control Theory

SKILLS

- C-C++
- Arduino
- LabVIEW
- Abaqus
- SolidWorks
- STK
- Ansys
- MATLAB
- Simulink
- Web Development

LANGUAGES

Arabic • Mother tongue
English • Fluent
French • Conversational

HOBBIES

Writing, Cycling, Chess

EDUCATION

Master of Science *Abu Dhabi, UAE*
Khalifa University of Science and Technology *08/2020 - 07/2022*
- Major: Mechanical Engineering
- Concentration: Space Systems and Technology
- GPA: 3.89

Bachelor of Science *Cairo, Egypt*
University of Science and Technology - Zewail City *09/2015 - 07/2020*
- Major: Aerospace Engineering
- GPA: 3.67
- Honors: Cum Laude

High School *Cairo, Egypt*
STEM Egypt for Boys *09/2012 - 07/2015*
- GPA: 4

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PROJECTS

"Designing and manfacturing an optimized Aerial Omnidirectional manipulator *Abu Dhabi, UAE*
CAIR project *03/2023 - Current*
- Solving for an optimal design for hexarotor omnidirectional drone with multiple constraints.
- Designing and manufacturing the optimized design and the gripper.
- Building a controller for the six independent DOFs and the gripper.

"Development of an Experimental Setup for CubeSat Attitude Determination and Control *Abu Dhabi, UAE*
Master's Thesis *01/2021 - 07/2022*
- Utilized air bearings to manufacture an ADCS testbed for any 1U CubeSat.
- Designed and manufactured the utilized air bearing.
- Manufactured and programmed a system to balance the center of gravity for the testbed.
- Added a system of reaction wheels to actuate the setup.

Guidance and Control of a Subsonic Sounding Rocket and Sub-orbital Cylindrical Satellite Design and Deployment *Cairo, Egypt*
Zewail City - Egyptian Military Technical College - Egyptian Space Agency *09/2019 - 07/2020*
- Applied Proportional Navigation to control a canard configuration sounding rocket to reach an altitude of 20 km as the first phase of the project
- Optimized the rocket trajectory to achieve the required end conditions for orbit insertion.
- Tested the performance of the control unit using a predefined trajectory and hardware-in-the-loop setup.

Designing and Manufacturing a Heavy-Lift Fixed Wing Unmanned Air Vehicle *California, USA*
SAE Aero Design West Competition *07/2018 - 04/2019*
- Co-operated with a team of 12 to design a UAV with a wing span of 3m.
- Responsible for the conceptual and preliminary design of the aircraft to carry around 16 kg of payload with the maximum of 1000 watts.
- Carried on the planform & stability design and the drag analysis.

Ground tracker Software *Cairo, Egypt*
Orbital Mechanics course (Undergraduate) *Spring 2018*
- Developing a GUI to track an object in any orbit using Gibbs method and Gauss method.
- MATLAB was used to program the code and the GUI

EXTRACURRICULAR ACTIVITIES

Spring 2015	**Co-founder**, Zewail University Chess Club	*Cairo, Egypt*
Fall 2016	**Head of Engineering committee**, IEEE Zewail University	*Cairo, Egypt*
Summer 2017	**Speaker**, Zewail City Science Festival	*Cairo, Egypt*
2017-2018	**Writer**, Journalism committee in Zewail City	*Cairo, Egypt*
Spring 2019	**Co-founder**, Flight Team - Zewail City	*Cairo, Egypt*
2022	**Member**, Chess Club in Khalifa University	*Abu Dhabi, UAE*