

# Abdallah Daher

## EDUCATION

<b>The Pennsylvania State University</b> , College of Engineering <i>Master of Science</i> in Aerospace Engineering Cumulative GPA: 3.64/4.00	<b>State College, PA</b>
<b>The Pennsylvania State University</b> , College of Engineering <i>Bachelor of Science</i> in Aerospace Engineering Major GPA: 3.90/4.00, Cumulative GPA: 3.62/4.00	<b>State College, PA</b>

## SKILLS

**Programming Languages & Tools:** Fortran, C++, MATLAB, Python, MPI, Simulink, LabVIEW, MS Excel, SolidWorks, AutoCAD  
**Core Competencies:** Unix/Linux Systems, Aircraft Performance Analysis, Fixed Wing Aerodynamics, Software Development, Algorithms & Data Structures, First-Principles Analysis, System Troubleshooting, Health and Usage Monitoring System (HUMS), System Testing

## EXPERIENCE

<b>Vertical Lift Research Center of Excellence: Penn State</b> , Research Assistant - Acoustics, May 2022 – Present	<b>State College, PA</b>
<ul style="list-style-type: none"><li>Enhanced acoustic prediction software (PSU-WOPWOP) development using Fortran and C++, focusing on eVTOL aircraft, ensuring alignment with FAA and ICAO noise regulatory standards</li><li>Managed automated build processes and configurations with CMake on Linux-based systems, improving development cycles for data-intensive applications</li><li>Developed advanced source/time parallelization algorithms with MPI protocols, achieving 50x optimization in computational runtime</li><li>Implemented Linux shell scripts for data testing and extraction, automating workflows and improving data accuracy</li><li>Leveraged Python for simulation workflows, data processing, and analysis for PSU-WOPWOP simulations</li><li>Demonstrated proficiency in debugging parallel Fortran modules in Linux, utilizing advanced debuggers such as GDB</li><li>Conducted acoustic data acquisition and analysis for eVTOL aircraft simulations, ensuring high-quality data</li><li>Generated comprehensive engineering reports documenting results and providing actionable recommendations</li></ul>	
<b>Gulf Helicopters</b> , Aircraft Engineer/Technician Oct 2019 – June 2021	<b>Doha, Qatar</b>
<ul style="list-style-type: none"><li>Performed scheduled and unscheduled heavy maintenance on AW139, AW189, and Bell 412 aircraft, ensuring all procedures and repairs adhered to established airworthiness regulatory standards (Part 25) for safety and compliance</li><li>Analyzed and reported on HUMS data to assess performance impacts of vibrations in components such as rotor assemblies, gearboxes, and avionics systems, ensuring compliance with Part 25 and informing maintenance requirements to enhance aircraft performance</li><li>Employed strain gauges and accelerometers to monitor aircraft structural loads and vibrations, enabling precise identification of stress points in components such as rotor blades, tension links, and dampers</li><li>Reviewed and analyzed engineering drawings to guide maintenance and repair work, ensuring accurate adherence to design specifications</li></ul>	

## PROJECTS

<b>Advanced Air Mobility Design</b> , Aircraft Performance & Simulations Group Member, Jan 2022 – Dec 2022	<b>State College, PA</b>
<ul style="list-style-type: none"><li>Developed MATLAB scripts to calculate performance characteristics of advanced air mobility aircraft, focusing on lift, drag, thrust, and power consumption</li><li>Analyzed the impact of design parameters such as rotor tilt angles and body incidence angles on aircraft performance</li><li>Simulated different wing configurations to evaluate aerodynamic efficiency</li><li>Generated comprehensive plots to visualize metrics including power requirements, energy efficiency, angle of attack, lift and drag coefficients, and total thrust</li><li>Implemented functions in MATLAB to determine rotor power requirements, incorporating induced power, profile power, and parasite power</li></ul>	

## AWARDS/CERTIFICATES

- Graduate Research and Teaching Assistantship Award
- Penn State College of Engineering Dean's List