

# Aman Basawanal

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## EDUCATION

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Carleton University	Ottawa, Ontario
<b>Master of Applied Science, Aerospace Engineering</b>	<i>Dec 2023</i>
	GPA: <b>11.75/12</b>
Embry-Riddle Aeronautical University	Prescott, Arizona
<b>Bachelor of Science, Aerospace Engineering</b>	<i>Dec 2021</i>
Area of Concentration: Aeronautics	GPA: <b>3.98/4.0</b>
<b>Minor:</b> Aviation Safety	

## SKILLS

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- Certified CATIA V5 Specialist - Mechanical Designer.
- Boeing's Performance Engineer's Tool (PET) for Flight Operations Engineering.
- Proficient in Microsoft Office software, MATLAB, Swift UI and Python.
- Working knowledge of SolidWorks, XFLR5, ANSYS Mechanical and ANSYS Fluent, VHDL, LabVIEW, Java, and C.

## WORK EXPERIENCE

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- **National Research Council Canada – Graduate Student Assistant** *2022 – Present*
  - Assisting in the development of a national airspace model using the pandas toolbox in python and data from NAV Canada and Transport Canada (TC)
  - Assisting other partners with an analysis of air traffic density in their respective areas for their missions using RPAS
- **Southwest Airlines - Aircraft Performance Engineering intern, Network Operations Control** *2021*
  - Built the standard atmosphere module for a new iPad app (Flight Suite) using Swift UI for aircraft performance related calculations to be performed by Boeing 737 series pilots of Southwest Airlines
  - Wrote scripts in python for automated testing of Flight Suite and incorporated feedback from project pilots regarding the user friendliness and optimization of the GUI
- **RISE DAAD, Carl von Ossietzky Universität Oldenburg, Germany - Virtual Research Intern** *2021*
  - Assisted a PhD student with the post processing of experimental studies of the MoWiTO wind turbine for potential applications in future onshore and offshore wind energy projects in the European Union
  - Used openFAST to run aeroelastic simulations incorporating fluid structure coupling to study the steady-state and transient behaviors of the MoWiTO wind turbine
  - Updated the MoWiTO turbine's structural, aerodynamic and elastic properties in the simulation model for optimal power generation and minimal fatigue damage accumulation
- **Southwest Airlines, Dallas, TX - Aerodynamics and Aircraft Performance Engineering Intern** *2020*
  - Analyzed aerodynamic configurations, modifications, airport and aviation critical area changes, and environmental conditions to determine mission capabilities for Boeing 737-700s and 737-800s
  - Analyzed takeoff, landing and cruise performance of the Boeing 737 MAX series under various conditions for reintroduction into service
  - Developed special flight procedures and flight plans to help minimize the impact of performance-limiting situations for our fleet of Boeing 737-700s and 737-800s
  - Completed various aircraft performance projects using C, Excel, SQL, XML and Boeing's PET
- **Aviation Safety Program Office Assistant, Embry-Riddle Aeronautical University** *2020-2021*
  - Analyzed and processed aircraft flight data for the school's fleet of Cessna 172s and Diamond DA40s
  - Assisted with safety report processing, inspecting and testing safety investigation equipment, inspecting and replenishing aircraft survival kits

- **Tutoring and Teaching Assistant, Embry-Riddle Aeronautical University & Carleton University**
  - Teaching Assistant and grader for Computer Aided Conceptual Design of Aerospace Systems at Embry-Riddle Aeronautical University and Solid Mechanics at Carleton University
  - Tutor for Calculus and Analytical Geometry, Physics, Fluid Mechanics, Thermodynamics and Peer Instructor for Calculus at Embry-Riddle Aeronautical University

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## LEADERSHIP ROLES

- Led a team of 5 to win the ‘Teenovators’ challenge, 2017 – a nation-wide innovation competition at Manipal University and was awarded the Teen innovator of the year award
- Served as Peer Instructor and Teaching Assistant at Embry-Riddle Aeronautical University
- Led a team of 4 to reverse engineer and model a de Havilland Comet 4 aircraft using CATIA V5 and create drawings and sections to laser cut and assemble the model

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## PROJECTS

- **Graduate Research** – Working to experimentally assess the feasibility of using low-cost drone mounted ultrasonic wind sensors to measure wind fields for applications in urban environments
- **Boeing Cargo Aircraft** – Aircraft Performance engineer for a Boeing sponsored senior design project to design a cargo freighter to eventually replace the Boeing 747-8F. Explored the effects of wing flexure on drag and weight reduction using computational tools (AVL and XFLR5) and wind tunnel testing
- **Undergraduate Research** – Researched the effects of leading and trailing edge flaps on flat plates at low Reynolds numbers using a low-speed wind tunnel, under a university grant, for potential use on Micro Aerial Vehicles (MAVs)
- **Aircraft Structures Class Project** – Used ANSYS Mechanical APDL to build a finite element model of a wing to meet various requirements such as tip deflection, yield stress and weight under certain expected wing loading and flight conditions
- **National Innovation Competition** – Led a team that designed and building a drone mountable device that extinguishes fire using sound waves
- **AZ Loop** – Braking system sub-team engineer for design and competition team to build a Hyperloop pod

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## AWARDS AND HONOR SOCIETIES

- Vishnu Mehrotra Scholarship in Mechanical and Aerospace Engineering, Carleton University 2022
- DAAD RISE Research Scholarship, Carl von Ossietzky Universität Oldenburg, Germany 2020, 2021
- Boeing Career Mentoring Program 2020-Present
- Sigma Gamma Tau, Tau Beta Pi, Phi Kappa Phi 2018-Present, 2019-Present, 2020-Present
- Dean’s List, Embry-Riddle Aeronautical University 2017, 2018, 2019, 2020
- Embry-Riddle Aeronautical University Honors program 2017-2021
- Presidential Scholarship, Embry-Riddle Aeronautical University 2017-2021
- Teen Innovator of the Year, India 2017