

# AHMED A. MOUSSA

Aerospace & Space Systems Engineering Student  
Experienced Software Developer

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## EXPERIENCE

- Jan 2023  
Aug 2023

**AI&T Automation Software Developer (Co-op)**  
MDA Ltd. – Sainte-Anne de Bellevue, QC

Galil DMC

Thermal

Python

  - Reflector **antenna thermal test automation, optimization, and simulation**
  - Developed a **library** facilitating the sequencing of **Galil DMC stepper control operations**
  - Created **utilities for troubleshooting** gantry errors and **multi-axis mechanical control**
- Aug 2022  
Dec 2022

**Avionic Systems Integration Intern (Co-op)**  
Bombardier Inc. – Montreal, QC

SATCOM

FDR

ISI

  - Assisted with **avionics system integrations** and adaptation for the Global 7500/8000
  - Supported avionics **compliance analysis** and test **requirement definition**
  - Conceived and developed tools to **automate FDR schema validation**, resulting in substantial time savings
- May 2021  
Aug 2021

**Data Vault Architect & Software Engineer (Co-op)**  
National Research Council Canada – Ottawa, ON

MySQL

React + TS

Python

MongoDB

  - Engineered a **big data ecosystem** including a **data vault, lake, pipeline, and parsers**
  - Collected data samples from various sources to create a data taxonomy and helped plan the **requirements and AI use-cases** of the data ecosystem
  - Conceived a **CRUD & analytics dashboard** to explore the data vault
- Apr 2020  
Sep 2020

**Software Developer**  
Solink – Kanata, ON

React + TS

AWS S3

Serverless

Elastic

  - Developed a **cloud-based control panel** facilitating **database management and data processing** used across the company, resulting in substantial time savings
  - Debugged and repaired **parser infrastructure** resolving missing or corrupt data issues raised by customers
- Jun 2019  
Aug 2019

**Jr. Developer & QA Automation Specialist**  
Solink – Kanata, ON

## TOOLS & SKILLS

- Software Development<sup>1</sup>
- Ansys HFSS
- MATLAB
- 3D Printing
- CATIAv5

## KEY THEORY

- Systems & Simulation
- Antenna Design
- Orbit & Attitude Mechanics
- Fluid Dynamics & CFD
- Thermodynamics

## EDUCATION

- B. Eng. Carleton University (2019 – 2024)  
**Aerospace & Space Systems Design**  
**Minor in Computer Science**
- Completing 4<sup>th</sup> Year of Studies
  - GPA 3.6
  - Co-op of the Year Nominee (2021)

## SECURITY

- Canadian Citizen  
Achieved Reliability Status  
Passed CGP & ITAR Assessments

## APPLIED PROJECTS

### Orbital & Trans-Planetary Simulator

Prototype Spacecraft & Planetary System Simulator (C++, OpenGL)

- A simulation core for orbits around celestial bodies & trans-planetary trajectories
- The simulator accounts for various perturbations and environments which leads to very accurate results
- Accomplished:** proof of concept of orbital simulation with an RK4 numerical solver and a functional OpenGL-based graphics engine
- Prototype R&D:** <https://dev.ahmedmoussa.ca/orbital/whitepaper.pdf>

<sup>1</sup> I am familiar with many programming languages, several database types and architectures, and networking infrastructure. I firmly believe that I can accomplish any software development related tasks.