Aaron Miguel de Windt

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Experience

September 2019 – Present

Dawn Aerospace, Delft

Control and software engineer

- Responsible for the development of aircaft system identification tools in Python.
- Developed internal enineering management web applications using Flask.
- Responsible for the development of the thrust vector control algorithms and software for a small satellite propulsion system. Moslty embedded programming in C/C++ with simulations in Python.

August 2019 – December 2019

Delft Aerospace Rocket Engineering, Delft

SPEAR Software engineer

- Supersonic Parachute Experiment Aboard REXUS, the goal is to flight test the Stratos III/IV Hemisflo drogue parachute at supersonic conditions as part of the REXUS/BEXUS program.
- Developed the ground station software using Python and QT.

August 2018 – August 2019

Airborne Composite Automation, The Hague

Software engineer

- Responsible for the development of control software for machines used to automate the production of composite parts, primirally in written Python.

September 2016 – August 2018

Delft Aerospace Rocket Engineering, Delft

Chief Simulations Stratos III

- At the time the largest student rocket ever built with the goal of breaking the European altitude record.
- Responsible for the development, operation and maintanance of a set of simulation tools primirally written in Python with C++ extensions.
- In charge of over eight part-time engineers.
- Worked on the preliminary and detailed design of Stratos III.
- Responsible of a state estimation and sensor fusion experiment using Kalman filters written in C++.
- Responsible for the range safety analysis of Stratos III.
- Produced miscellaneous hardware parts, primirally composite parts, metal machining and assembly of the hybrid rocket engine.

Education

2015 – Present **MSc Aerospace Control and Simulations**
Expected 2021
Thesis: Orbital ascent trajectory optimization using reinforcement learning
Delft University of Technology

2011 – 2015 **BSc Aerospace Engineering**
Delft University of Technology

Languages

Papiamentu	Native speaker
English	Fluent
Dutch	Good
Spanish	Good

Technical skills

Programming, Control theory, Machine learning, Systems Engineering, Metal working, Carbon/glass fiber composite materials production, Bench-work

Software skills

Proficient	Python, C/C++, Matlab, Git, LaTeX, Simulink, Linux, Windows, Numpy, Pandas, XArray, Scipy, Jupyter
Working Knowledge	Tensorflow, RLlib, JSBSim, FreeRTOS, HTML, Javascript, CSS, SQL, Microsoft/Libre office, Flask, Qt, CATIA
Familiar	Rust, OpenCV, PHP, Siemens PLC Programming

Experience (Continued)

Febuary 2018 – June 2018

DAWN Aerospace, Delft

Control and Simulation intern

- Researched into the development of aircaft system identification tools and developed tools demonstrating the methods found.

September 2017 – January 2018

Delft Aerospace Rocket Engineering, Delft

DARE Minor Supervisor

- Minor program organized by DARE with the goal to design, produce and test a rocket engine trust vectoring system.
- Supervised and provided technical guidance to the DARE Minor 2017/2018 team.

September 2017 – September 2018

Delft Aerospace Rocket Engineering, Delft

Secretary Executive Safety Board

- Responsible for taking minutes and general organization of the DARE safety board.

May 2013 – June 2016

Delft Aerospace Rocket Engineering, Delft

Advanced Control Team Engineer and Co-Founder

- Co-Founder of the Advanced Control Team (ACT) with the goal to develop a working active stabilization and guidance system for a rocket.
- In charge of the ACT Control, Software and Electronics department.
- In charge of over four part-time engineers.
- Responsible for the development of the flight computer firmware written in C/C++ running on FreeRTOS.
- Responsible for the development of the ground station software written in C/C++ and Python.
- Responsible for the development of the trajectory simulation software, primarily written in Python with C++ extensions.
- Sole developer of the software and hardware in the loop test toolkit. Custom Windows and Linux simulations with RS232 and TCP/IP for communication between the simulation and flight computer/software.

January 2014 – November 2015

Delft Aerospace Rocket Engineering, Delft

Stratos II and Stratos II+ Simulations teamleader

- The Stratos II+ Rocket launched in 2015 and successfully broke the European Student Altitude Record.
- At the time this was the largest student rocket built in Europe.
- Responsible for the development, operation and maintenance of a set of simulation tools primarily written in Python with C++ extensions.
- In charge of two part-time engineers.
- Responsible for the range safety analysis of Stratos II and II+.