

# ANDREW SPEKREIJSE

## Aerospace and Sustainability Engineer



### PROFILE

Birthday: 10-12-1997

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Nationalities:

New Zealander

Dutch

Languages:

English (native)

Dutch (moderate)

Spanish (beginner)

### SKILLS

Aerospace Engineering: 5 years

CATIA V5: 5 years

3D Experience: 2 years

SolidWorks: 1 year

Fusion 360: 3 years

Manufacturing: 4 years

Design for Manufacturing: 2 years

CAM/CNC: 2 years

Python (2.7/3.x): 7 years

MATLAB/Simulink: 2 years

LaTeX: 6 years

### PERSONAL ACHEIVMENTS

2nd degree Black Belt in Karate: 2014

Received the Queens Scout Award: 2016

Received Duke of Edinburgh Gold Award: 2016

### PERSONAL INTERESTS

Kayaking

Canoe Polo

Hiking

Skiing

Worldwide Travel

Personal Development

Cultural Awareness

### EDUCATION

#### Delft University of Technology

2016—2023

*Attained Masters of Science in Sustainable Energy Technology: 2021—May 2022*

*Attained Bachelor of Science in Aerospace Engineering: 2016—2019*

My undergraduate degree at Delft University of Technology was three years in which I gain knowledge on various Aerospace fields, namely; structures and materials, low and high speed aerodynamics, control systems, flight dynamics and verification and validation of models. I also completed a six month minor at Leiden University in the fields of International Relations, Governance and Terrorism at Leiden University

My post graduate degree is focusing on creating a sustainable future for all energy technologies, with a focus on energy storage technologies, bio-energy technologies and economics of sustainability.

#### HyCentA Research GmbH

2022—2023

*Master Thesis Student*

My thesis is the creation of a numerical model which describes the steady state performance of Solid Oxide Cell (Electrolysers and Fuel Cells) systems. The purpose of the model is to simulate the operation of Solid Oxide Electrolyser System to be used inside economics models to determine the use cases for electrolyser systems in various locations in Austria. The models are developed in Python and MATLAB/Simulink.

### EXPERIENCE

#### Delft Aerospace Rocket Engineering (DARE)

2017—2022

*Roles: Roll Control System Lead, Stratos IV, Launchday Committee, Cryogenic Propulsion Team Leader*

[Delft Aerospace Rocket Engineering](#) is the most advance European student rocketry team. The society is actively involved in designing, manufacturing, assembling, testing and flying all aspects of rocketry and rocket technology for a wide range of rocket sizes. In my time at DARE, I have led a six person team in the design, manufacturing and implementation of an active roll control system in DARE's biggest rocket, [Stratos IV](#), to prevent the onset of pitch-roll coupling. In this roll I have designed and the world's most powerful nitrous-oxide mono-propellant engine. I have also worked on and led a team on a Liquid Oxygen-Ethanol blow-down bi-propellant rocket engine, where we set the fundamental work for a larger scale engine of the same type to be developed by another team in DARE. I am also involved in the organisational committee for launching all of DARE's smaller rockets, including the Dutch CanSat rockets, within the Netherlands.

In my time in DARE, I have used CATIA V5, 3D Experience, Fusion 360, Python, MATLAB and Simulink to create, model, simulate and manufacture the rockets/engines me and my teams have designed. The manufacturing methods I have gained proficiency with includes manual Lathe and Mill operations as well as HAAS and Siemens controlled CNC milling machines.

#### Delft University of Technology

2018—2022

*Roles: Teaching Assistant— Introduction to Scientific Programming for Aerospace Engineers, Exploring Aerospace Engineering, Manufacturing and Design, Integrated technology, Design and Construction, Engineering Drawing*

Delft University of Technology is one of the leading technical universities in Europe, especially for Aerospace Engineering. In my role as teaching assistant for five different courses, over three years at two different faculties, I have taught students how to code in Python 3, taught students how various mechanical manufacturing processes work and how to design products for different production methods and taught and mentored freshman students on the fundamental concepts of Aerospace Engineering and helped them design and build their own flying wing aircraft and wing spars and taught students Dassault Systèmes's 3D Experience

#### VSV Leonardo da Vinci

2016—2019

*Roles: Chairman "Intercom", Secretary "Limitless", Treasurer "Space Department", Batchelor Evaluation Committee Member*

VSV Leonardo da Vinci is the student study society of Aerospace Engineering at Delft University of Technology. Over the three years I was a bachelor student, I held a number of roles within this association where I improved the social interaction between international and Dutch students, organised the largest annual event at the faculty, improved the quality of all bachelor courses in Aerospace Engineering and facilitated connecting students to the Aerospace industry though organising company visits and job fairs.