Michiel Desmedt

Multidisciplinary young engineer with a strong background in electrical, mechanical and aerospace engineering.
Interested in electromagnetics, electrical machines, and renewable energy. Passionate about sharing knowledge in these areas through engineering and science education. Motivated to help improve education through pedagogic research.

Engineering and Science Pedagogy · Electrical Machine Design · Focused on practical hands-on experience · FEA with Comsol Multiphisycs · CAD in Autodesk Fusion360 for DFM and DFA · 3D printing focusing on structural parts · Fluent in Dutch and English

Work Experience

02/'21 - current — **PhD Candidate** — NTNU/HydroCen

The goal of my PhD is mapping the performance and applications of a novel machine topology with two **counter-rotating rotors** utilizing twin space harmonics. I **supervised a MSc student** together which whom I successfully designed and built a 2kW prototype.

Next to that, I am a **lecturer in the subject FENT2321/TEP4175** where students design and build their own wind turbine. This also includes designing teaching materials to help students reach the learning objectives more efficiently.

01/'20 - 11/'20 — **Junior Consultant** — Greenfish part of Accenture

Focusing mainly on the Energy Services, such as performing energy audits at clients conform the Dutch informatieplicht and European Energy Directive. This includes **writing proposals to compete in tenders**, visiting the clients' sites, **managing and processing client energy data**, writing reports with our findings.

Next to that, I am the go-to person when it comes to data analysis in Microsoft Power BI.

05/'19 - 07/'19 — **Part-time Electromagnetics Researcher** — Umincorp

Performing static **electromagnetic FEM simulations** in COMSOL multiphysics.
Verifying an existing model of a Magnetic Density Separation technology for **improved plastic recycling**.
On top of that, I helped improving the magnetic field strength in their new design.

11/'16 - 01/'17 — **Resource Assessment Intern** — Eoly

Developed a tool in MATLAB which can easily process wind turbine SCADA data and modelled wind power from WindPRO. The output is a complete report showing losses in energy production in order to **expose technical issues faster and more easily**.

Education

2017-2019 — **Double degree European Wind Energy Master programme**, 96% grade average

Attended DTU in Copenhagen, Denmark and NTNU in Trondheim, Norway for a semester each.
Focused on design of electrical machines and power electronics. Wrote a thesis on the **electromechanical performance of pseudo direct-drives** for TU Delft and NTNU for which I received a master's degree in **Electrical Engineering** from TU Delft and **Wind Energy Technology** from NTNU.

2016-2017 — **Electrical Engineering Bridging programme**, TU Delft, Netherlands. 81% grade average

2013-2016 — **Bachelor Aerospace Engineering**, TU Delft, Netherlands. 75% grade average

Extracurricular

11/'20 — Publication of a peer-reviewed article titled "**Electromechanical Dynamics Analysis of Pole-piece Rotors in Pseudo Direct-drive Wind Turbine Generators**" presented at the virtual ICEM2020 conference.

09/'15-01/'16 — **Electrical Engineer** at Formula Student Team Delft. Responsible for making sure all sensors and actuators can be connected to each other by creating routing throughout the chassis in CATIA. Sizing of the connectors and wiring was done keeping in mind the weight of the wiring harness.

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