Eric Lehder - CV

eric.lehder@gmail.com

LinkedIn
Personal website

Summary

Mechanical Engineer (PhD, Digital Manufacturing) with international research training in the UK, Netherlands, and Germany. Skilled in computational modelling, multiphysics simulation, and porous media analysis, with experience bridging experimental validation and numerical design. Co-founder of a renewable energy startup, where I developed advanced electrode architectures and AI-driven modelling tools. Published peer-reviewed research on multiscale optimisation methods and experienced in applied innovation for biomedical and energy applications. Open, analytical, and collaborative; fluent in English and Spanish, conversational in German. Beginner in Norwegian.

Primary Education

Doctor of Philosophy in Mechanical Engineering- University of Nottingham, UK   **10/2018-07/2023**

- Developed a computational tool in MATLAB to optimize porous lattice structures for tissue regeneration, focusing on transport phenomena and multiphase interactions within 3D printed devices.
- Presented research at an international conference and published a peer-reviewed article on multiscale optimisation of porous scaffolds (*Biomechanics and Modeling in Mechanobiology*, 2021).
- Applied Finite Element Modelling (ABAQUS, Python) to simulate mechanical performance and coupled transport behaviour in complex geometries.
- Gained hands-on experience with a range of Additive Manufacturing techniques (SLA, DLP, FDM, SLS, SLM, Inkjet), linking experimental methods with computational predictions.

Master of Science in Mechanical Engineering- Delft University of Technology, Netherlands   **08/2016-08/2018**

- Enrolled in a diverse array of courses encompassing Intelligent vehicles (Machine learning), sports engineering, Control Engineering, biomedical design and bio-inspired design.

Bachelor of Engineering in Mechanical Engineering- University of Birmingham,UK   **09/2012-07/2015**

- Finished with a first class degree.

Amongst others, I completed modules on Renewable Energy Technologies.

Work Experience

Pipeline Organics Ltd, UK: **06/2024-current (full-time)**
CTO and Co-founder working on the design and development of our TankArc technology.
- Led design engineering and co-shaped company strategy as CTO.
- Developed computational models and AI-driven design tools for porous electrodes.
- Selected for Google Visionaries AI Incubator; now part of Microsoft for Startups with focus on Azure AI.

Metamorphic Additive Manufacturing, UK: **01/2024-03/2024 (full-time)**
Design Engineer working on bridging the gap between mechanical design and computational design.
- Worked on designing, simulating and optimizing novel devices that take advantage of the revolutionary design freedom offered by Additive Manufacturing.

4D Biomaterials, UK: **04/2022-12/2023 (full-time)**
Product Development Engineer working on the development of novel 3D printable medical devices.
- Designed, additively manufactured, and tested degradable porous medical devices.
- Applied SolidWorks and Altair latticing tools with focus on AM and porous media design.

- Ensured regulatory compliance and validation of device performance.
- Developed a MATLAB tool to model degradation and fluid transport in porous structures.

Centre for Additive Manufacturing, UK: **02/2022-04/2022 (part-time)**
Technical Researcher within the Centre for Additive Manufacturing of the University of Nottingham.

- Customized the MATLAB slicing software that was being used for the project.
- Designed a wound healing implant for 3D printing.

Porsche Engineering Services, Germany: **03/2016-09/2016 (Internship)**
Mechanical Engineering intern in the transmission department.

- Employed CATIA to create a testing platform for a manual gearbox, enabling the assessment of drag torque across different gear ratios.
- Improved Simulink model simulating Hybrid 4WD Porsche Cayenne consumption patterns in different modes.

Courses and Training

Certifications in Risk Management and Design Controls–Greenlight Guru, Online   **08/2023-09/2023**
Certification in Solidworks Advanced Surfacing–Dassault Systems, Online   **05/2020**
Analysing Data with Python - IBM, Online   **11/2019-01/2020**
Edx online course offered by IBM
- Through this and a previous course I completed I developed useful skills with python to analyze data.

Greatest Unsolved Mysteries of the Universe – ANUx, Online   **08/2018-09/2018**
Edx online course offered by the Australian National University
- Amongst other things, I learned how to measure size, distance, speed and acceleration of observed stars.

Honour code certificate in Aeronautical Engineering–DelftX, Online   **08/2014-10/2014**
- Acquired useful knowledge about foundation concepts of aeronautical engineering.

Critical Thinking in Global Challenges-The University of Edinburgh, Online   **11/2014-11/2014**
- Focusing on global challenges has sharpened my critical thinking in Engineering research

Skills

Languages:

- English (Native), Spanish (Native), German (Conversational), Norwegian (Beginner)

Information Technology Skills:
- Proficient in **MATLAB** and **ABAQUS** for computational modelling and simulation.
- Skilled in **Python, C#, ANSYS, Simulink, OpenFoam** for numerical modelling and analysis.
- Certified in **SolidWorks**; additional experience with Fusion 360 and Blender.
- Competent in **data science tools** and familiar with **Azure** for development.

Hobbies and Interests

Sports:

- Played tennis from when I was 3 to when I was 16. It taught me the value of perseverance and dedication.
- I play padel or squash every week.
- Learning to play piano.

Publications

A multiscale optimisation method for bone growth scaffolds (2021)