Wojciech Sadowski

Ambitious and hard-working engineer interested in numerical analysis and oriented on applying it to real-world problems. Always open for new challenges and opportunities to broaden my set of skills. I enjoy working in interdisciplinary teams, with people who share similar ideas and attitude to technology.

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Work experience

Project leader
since Sept. 2019

The Institute of Applied Research of the Warsaw University of Technology, QuickerSim Ltd.

- Leading a joint research project (budget: approx. 80.000€) concerning the increase of accuracy of 3D printing in SLS technology by the means of coupled thermal and structural analyses.
- Coordinating the team consisting of three engineers.
- Running CFD simulations in commercial software and writing specialised coupled thermal/structural numerical code for the project.

CFD Engineer / Developer
since Dec. 2017

QuickerSim Ltd.

- Implemented Finite Element Method solver employing geometrically exact beam elements for structural analyses with small or large deformations and linear or non-linear buckling simulations. Conducted industrial-grade analysis of pressure filters with the aforementioned solver.
- Implemented various RANS turbulence models (e.g. Chien $k-\varepsilon$, Wilcox $k-\omega$) in QuickerSim in-house Finite Element Method based CFD solver adopted in industry and academia. Validated implemented models against established theoretical and experimental results.
- Conducted analysis of flow-induced noise using Large Eddy Simulation by means of Lattice-Boltzmann method for research and development of hearing aids.
- Simulated blood flow for artificial organ research and development.
- Implemented various stabilisation methods for CFD in Finite Element Method framework (e.g. Flux Corrected Transport).

Intern
Sept. 2017 - Dec. 2017

Bosch, Product Life Management

- Provided technical support for CAD and CAM software users in various Bosch departments around the globe.
- Beta-tested new versions of CAD/CAM software.
- Administrated PLM data.

Vehicle Dynamics Engineer
Oct. 2016 - Sept. 2017

Hyper Poland University Team

- Designed and constructed first polish Hyperloop pod prototype.
- Coordinated mechanical assembly of the prototype.
- Implemented Hyperloop prototype dynamic model in Matlab and Simulink.
- Designed and manufactured prototype lateral stabilizers.

Mechanical Engineer
Oct. 2015 - Jun. 2018

Students Association of Vehicle Aerodynamics

- Constructed extremely fuel efficient vehicles Kropelka 2.0 and PAKS.
- Coordinated mechanical team (5 people) of Kropelka 2.0 project.
- Improved and redesigned the drivetrain of Kropelka 2.0.

Education

M. Eng. Mechanical Engineering
Warsaw University of Technology, Faculty of Power and Aeronautical Engineering
Feb. 2018 - Sept. 2019
Thesis: *Assessment of an algebraic intermittency model for separation-induced transition*
GPA: *4.33* (scale: *2.0-5.0*; higher is better)

B. Eng. Robotics,
Warsaw University of Technology, Faculty of Power and Aeronautical Engineering
Sept. 2014 - Feb. 2018
Thesis: *Trajectory planning and obstacle avoidance in cluttered environment*
GPA: *4.07* (scale: *2.0-5.0*; higher is better)

Achievements

Ministry of Science and Higher Education Scholarship for Scientific Achievements (*March 2018*)

Finalist of Hyperloop Pod Competition II (*Los Angeles, August 2017*)

3rd place, Kropelka 2.0 project, Shell Eco-Marathon Challenger (*Le Mans, 2018*)

2nd place, PAKS project, Shell Eco-Marathon Challenger (*Le Mans, 2016*)

Skills

Engineering and Science:	
Turbulence modelling	very good
CFD	good
Finite Element Method	very good
Programming:	
C/C++	intermediate
Matlab, Simulink	very good
Python	good
CAE software:	
OpenFOAM	very good
Ansys Mechanical	good
Ansys Fluent	good
ParaView	very good
CAD software:	
Siemens NX	very good
Autodesk Inventor	good
Solidworks	intermediate
Miscellaneous:	
LaTeX	very good
Linux-based systems	intermediate

Languages

English	very good (level C1)
German	intermediate (level B1)
Polish	native

Personal interests

Sailing, science-fiction literature