Pawel Safuryn

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EDUCATION

UNIVERSITY OF EDINBURGH
MEng (Hons) Mechanical Engineering
Grad. Jul 2017 | Edinburgh, UK
First Class Honours

UNIV. OF PENNSYLVANIA
Exchange student
Aug 2014 - May 2015 | Phila., USA
Cum. GPA: 3.84 / 4.00
Dean's List Honours

NANJING UNIV. OF AERONAUTICS AND ASTRONAUTICS
Summer Exchange, Manufacturing Training
Jul 2014 | Nanjing, China
Chinese language and culture classes
CNC turning, milling and laser cutting

HIGH SCHOOL NO 3
IB Bilingual Diploma
Grad. May 2012 | Gdynia, Poland
Maths HL: 7/7
Physics HL: 7/7

COURSEWORK

GRADUATE LEVEL
Computational Fluid Dynamics
Numerical and FE Methods
FEM for Solids and Structures
Nonlinear Dynamics and Chaos
Dynamics 5 (Impact and Shockwave)

UNDERGRADUATE LEVEL
Fluid Mechanics 2-4
Dynamics 1-4
Engineering Thermodynamics
Heat and Mass Transfer
Engineering Project Management

ONLINE
Machine Learning by Stanford
Deep Learning Specialization
Data Scientist with Python
Data Visualisation

SKILLS

PROGRAMMING
Python • Matlab/Octave • C/C++
SQL • LaTeX• Linux • Git • VBA

CAE/CAD
OpenFOAM • Star-CCM+ • NX

LANGUAGES
English • Polish • Spanish (B1)

EXPERIENCE

ROLLS-ROYCE | Structural Engineer
Sep 2017 - Present, Jun 2016 – Sep 2016 (intern) | Derby, UK

- Currently part of Structural Systems Design team responsible for system design integration and performing computational mechanical analyses.
- Completed an Engineering Graduate Scheme designed to develop technical leaders at an accelerated pace.
- Gained aerospace and software experience in departments including Whole Engine Modelling, Manufacturing Capability Acquisition in Compressors, High Performance Computing, High Temperature Research Centre, and Future Technologies Group.
- Led a project implementing machine learning visual inspection of fan blades to automatically detect and classify defects.
- Conducted mathematical and statistical analysis on vast amounts of historical manufacturing inspection data and presented it to management.
- Developed automated benchmarking software to verify computational performance of various in-house CFD codes and high performance computing (HPC) platforms.
- Utilised Python and its scientific libraries (numpy, pandas, matplotlib, h5py, scikit-learn, bokeh), parallel programming libraries in C, and Bash scripting.
- Used NX to fully define geometry of a strain measuring system used on wax patterns during the investment casting process.
- Performed novel aerothermal analysis of a radial compressor impeller with 'real gas' supercritical CO_2 as a working fluid.
- Created suitable meshes, defined thermodynamic models, and investigated compressor performance using in-house CFD code - HYDRA.
- My highly innovative work was presented at sCO_2 symposium in the USA and enabled me to become peer reviewer at ASME Turbo Expo conference.
- Successfully worked in small teams as well as on big cross-departmental projects involving many interfaces and high levels of uncertainty.

DEM SOLUTIONS | EDEM Engineering Support
Oct 2016 – Dec 2016 (part time), Jan 2016 – Jun 2016 | Edinburgh, UK

- Completed a 6 months long placement as part of my university degree and continued to provide engineering support part time for 3 more months.
- Utilised EDEM, a Discrete Element Method software, to set up, run and post-process bulk material simulations; and presented technical results.
- Introduced custom physics models by using EDEM API and C++.

PROJECTS

PANIC EVACUATION MODELLING | MEng Individual Project
Sep 2016 – Apr 2017 | Edinburgh, UK

- Implemented an appropriate agent-based model in OpenFOAM, tested its predictive capabilities and investigated various panic evacuation scenarios.
- Used C++ to implement physics governing the agent motion and modify other solver algorithms like agent-wall interactions or path finding.
- Performed detailed verification of the code, calibrated the simulation parameters and validated the model against experiments.
- Used Git version control to collaborate with a team of 4 on improving the agent-based models for panic evacuations.

EXTRACURRICURALS

2017-2019 STEM ambassador teaching about digital tech in aerospace
2012-2019 Edinburgh University and Rolls Royce Tennis Clubs