# Piotr Zacha

Focused professional with Master of Science in Mechatronics. Participant of engineering trainings organized by European Space Agency. Python developer with projects covering web-development (Django, Flask), mathematical modeling (NumPy, Matplotlib) and data processing (Pandas, Jupyter Notebook). Over 3 years of professional experience. In Space Research Centre worked in ESA's JUICE project. While working in FEV was part of fault fixing and diagnostics support team. It included regular short notice international travels to customers site.

Team member with good communication skills, motivated to achieve goals. Willing to share his knowledge and learn from more experienced colleagues. Portfolio and Github available.

pzacha11@gmail.com | 606 136 952 | portfolio | github.com/pzacha | linkedin.com/in/piotr-zacha

## WORK EXPERIENCE

**Software Application Engineer**
**FEV Polska**, Cracow, Poland
10/2018 – 02/2020

Played a key role in successful installation of test bench for tier 1 supplier in German automotive market. Responsible for:

- delivering successful installation of the test bed on-site, which included verification and validation of system specification as well as customer sign-off tests,
- delivering and modifying existing test routines to suite new test bed, including developing Python scripts for generating and modifying data,
- based on ongoing conversations with customer creating requirements and user stories,
- developing and adapting components of an automation system controlling the powertrain test bench,
- on-site software modifications based on current needs,
- regular international travels to customer's site.

Joined the development and commissioning team of road load simulator created in Simulink environment. Responsible for:

- adjusting dyno control system for various test benches,
- diagnosing and fixing faulty test beds on-site.

**Engineer in Space Mechatronics and Robotics Laboratory**
**Space Research Centre** - **Polish Academy of Sciences**, Warsaw, Poland
04/2017 – 08/2018

- Responsible for analysis of the impact of flexible antenna (JUICE project) on the dynamics of the spacecraft. To achieve goal created dedicated mathematical model based on Laplace transform and matrix eigenvalue. Model was verified through Matlab and Simulink simulations and later compared with laboratory test results.
- Designed several components 3D CAD environment (Inventor) for JUICE project.

*Contact: Tomasz Barciński, PhD – tbarcinski@cbk.waw.pl, +48 22 4966*

**Student Intern in Laboratory of Photonics and Micromechanics**
**Space Research Centre** - **Polish Academy of Sciences**, Warsaw, Poland
07/2016

Performed a detail analysis of the Fourier spectrometers used in space missions. Created numerical model describing methods of introducing optical path difference between beams in interferometers. Created Matlab model to verify their functional parameters.

## EDUCATION

**Warsaw University of Technology – BSc and MSc in Mechatronics (full-time), specialization: Photonics Engineering**

- MSc thesis: Analysis of the impact of flexible antenna on the dynamics of a spacecraft – in association with SRC PAN.
- BSc thesis: Analysis and modeling of compact Fourier spectrometers.

**European Space Agency – ESA/ELGRA Gravity-Related Research Summer School 2017**

International training for scientists and engineers in ESEC, Belgium. It offered an overview of current research under microgravity and hypergravity conditions in both life and physical sciences - link.

## SKILLS

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| **Programming** | Python, C++, Matlab |
| **Data Science** | SQL, NumPy, Matplotlib, Pandas, Jupyter Notebook, scikit-learn |
| **Web Development** | Django, Flask, Bootstrap, CSS, HTML |
| **Languages** | English – professional, German – intermediate |
| **Other** | Confluence, JIRA, Git |

## SOFTWARE PROJECTS

**2D solar system model:** it uses Euler method to estimate position and velocity of objects. User can add additional objects to simulation. (NumPy, Matplotlib, Tkinter) – github

**Event calendar:** app that allows to view and manage cultural events. Deployed using Heroku: link. (Django, Bootstrap, HTML) – github

**Blog:** (Flask, Bootstrap, SQLAlchemy, HTML) – github