Piotr Zacha

Focused professional with Master of Science in Mechatronics. Participant of 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). Familiar with image processing in C ++. Over 3 years of professional experience in Space Research Center of the Polish Academy of Sciences and FEV Polska.

Enjoys working in team. Willing to share his knowledge and learn from more experienced people. Accustomed to working with international clients. Portfolio and Github repositories 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

Responsible for adaptation and configuration of the automation system controlling the powertrain test bench, according to customer requirements. In project for global automotive and industrial supplier in Germany was responsible for:

- delivering successful installation of the test bench on customer site, which included verification and validation of system specification as well as customer sign off tests,
- generating and modyfing existing test routines to suite new test bench, including developing Python scripts for generating and modifying data logs and csv files,
- creating customer requirements and user stories,
- software modification based on current customer needs.

Was part of a team preparing Simulink model for various test bench controllers. Tasked with modifying torque equalizer function, assigning dyno parameters, defining rotation direction.

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

Responsible for analysis of the impact of flexible antenna (part of Radio Frequency Analyser, used, among others, in JUICE and Chang'E-4 projects) on the dynamics of a spacecraft:

- created mathematical model based on Laplace transform and matrix eigenvalues,
- model verification through Matlab and Simulink simulations
- compared results with laboratory experiments.

Design of small mechanical elements in Inventor for JUICE project.
Contact: Tomasz Barciński, PhD – tbarcinski@cbk.waw.pl, +48 22 4966

Intern Engineer in Laboratory of Photonics and Micromechanics
Space Research Centre of the Polish Academy of Sciences, Warsaw, Poland
07/2016

Analyzed Fourier spectrometers used in space missions. Researched and created numerical model of various methods of introducing optical path difference between beams. Compared their functional parameters based on Matlab simulations.

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 summer school in ESEC, Belgium. It offered an overview of current research under microgravity and hypergravity conditions in both life and physical sciences.

SKILLS

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