Mitja Jančič

Nationality: Slovenian   **Date of birth:** 22/06/1992   **Gender:** Male

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WORK EXPERIENCE

Self-Employed
Mitja Jančič s.p. [14/11/2017 – Current]

Address: Laško (Slovenia)

Continued cooperation with NOVA Vertriebsgesellschaft m.b.H. focusing on new software development tool which is used for constructing new paragliding equipment and simulations (computational fluid dynamics and structural analysis). The majority of work is done in EXCEL VBA, Free Pascal and partly also in Python. Work includes:
   • A sophisticated Excel file with complicated hand-written macros.
   • DXF pattern exporter written in Pascal.
   • Development of dedicated FEM meshing tool for paragliders.
   • ...
   • Ongoing support and new feature request developments.

At Interenergo d.d. we focused on trading tools and providing data for the analysts. The vast majority of work is done in .net, mySQL and Python.
   • Development of API for automatic trading tool.
   • Scripts for gathering data in a locally hosted database which is later used for prediction models.
   • Database management.
   • Frontend and backend development.

Other projects include:
   • Webpages (wordpress or custom API + frontend development).

Scientific associate
"Jožef Stefan" Institute [28/02/2019 – 01/03/2023]

Address: Ljubljana (Slovenia)

Employed as scientific associate during my PhD studies. Work includes:
   • Software development, primarily in C++ and python.
   • Development of numerical library Medusa (for meshless treatment of partial differential equations) and its implementation to realistic industrial problems.
   • Physical and mathematical modelling - including obtaining numerical solutions.
   • Fluid flow simulation. Structural analysis: elastic and plastic deformation.
   • A detailed study of the stability of different approximation methods used to obtain the numerical solution of a PDE.
   • In-depth understanding of adaptive solution procedures (the main topic of my PhD).
   • GPU programming with CUDA.
   • Publication of scientific papers.

Intern

"Jožef Stefan" institute [31/08/2016 – 30/09/2017]

Address: Ljubljana (Slovenia)

- Machine learning application to an industrial problem: Forecasting radioactive cloud movement around a nuclear plant.
- Masters thesis *"Identification of dynamic systems using deep Gaussian Processes"*

Assistant in R&D

NOVA Vertriebsgesellschaft m.b.H. [30/06/2014 – 14/11/2017]

Address: Innsbruck (Austria)

Occasional cooperation with the company on topics:
- Sophisticated modelling of "ballooning effect" and its implementation in the production protocol via Python code.
- Production quality assurance with a precise experimental work.
- Translations and other minor works on their webpage www.nova.eu

EDUCATION AND TRAINING

Doctorate of Science

Jozef Stefan international postgraduate school [30/09/2019 – Current]

Address: Ljubljana (Slovenia)
Level in EQF: EQF level 8

Working on PhD thesis *"Robust strong form mesh-free method for transport problems".*
Keywords: meshless, mesh-free, high performance computing, parallelization, thermoelasticity, flud flow, ...

Most of the work is expected to be done in Python and C++.

Master of Science

University of Ljubljana, Faculty of Mechanical Engineering [2014 – 2017]

Address: Ljubljana (Slovenia)
Level in EQF: EQF level 7

Studied laser techniques and mechatronics. Showed a lot of interest in (non)linear dynamics.
Master thesis: *Identification of dynamic systems using deep Gaussian Processes*

Bachelor's degree in Physics

University of Ljubljana, Faculty of Mathematics and Physics [2010 – 2015]

Address: Ljubljana (Slovenia)
Level in EQF: EQF level 6

General physics.

LANGUAGE SKILLS

Mother tongue(s): **Slovenian**

Other language(s):

English

LISTENING C1 **READING** C1 **WRITING** C1

SPOKEN PRODUCTION B2 **SPOKEN INTERACTION** B2

German

LISTENING B1 **READING** B1 **WRITING** B1

SPOKEN PRODUCTION B1 **SPOKEN INTERACTION** B1

Croatian

LISTENING B2 READING B2 WRITING A2

SPOKEN PRODUCTION B1 SPOKEN INTERACTION B1

DIGITAL SKILLS

OS
Linux / Windows / WSL

Coding
C# / C++ / postgresSQL / Free Pascal / Python / Typescript / Excel VBA / ASP .NET / CUDA / SQL / Git

Writing
Microsoft Word / Latex

Others
Abaqus (FEM) / FreeFem++ / Wordpress

PUBLICATIONS

Publications

1. RASHKOVSKA, Aleksandra, JANČIČ, Mitja, DEPOLLI, Matjaž, KOSMAČ, Janko, KOSEC, Gregor. Uncertainty assessment of dynamic thermal line rating for operational use at transmission system operators.

2. JANČIČ, Mitja, SLAK, Jure, KOSEC, Gregor. Monomial augmentation guidelines for RBF-FD from accuracy versus computational time perspective.

3. STRNIŠA, Filip, JANČIČ, Mitja, KOSEC, Gregor. A meshless solution of a small-strain plasticity problem.

4. JANČIČ, Mitja, KOSEC, Gregor. Stability analysis of RBF-FD and WLS based local strong form meshless methods on scattered nodes.

6. JANČIČ, Mitja, STRNIŠA, Filip, KOSEC, Gregor. Implicit-explicit error indicator based on approximation order.

7. JANČIČ, Mitja, SLAK, Jure, KOSEC, Gregor. p-refined RBF-FD solution of a Poisson problem.

8. JANČIČ, Mitja, SLAK, Jure, KOSEC, Gregor. GPU accelerated RBF-FD solution of poisson's equation.

9 JANČIČ, Mitja, KOCIJAN, Juš, GRAŠIČ, Boštjan. Identification of atmospheric variable using deep Gaussian processes.

ORGANISATIONAL SKILLS

Organisational skills

- Team leader of national paragliding team at the European and World Championships 2016-2019
- Leading editor of Slovenian paragliding magazine IKAR in 2018
- President of *Slovenian Paragliding Team* club (2016-2020)
- Main administrator in local paragliding club *DJP Metulj Rimske Toplice* (2013 -)
- As pool animator we organised big events (up to 1000 people attended) - I usually had the leading organisational role during that event.
- Management of students during my employment at the Jožef Stefan Institute.
- Life balancing between freelancing, PhD, employment, paragliding, family and friends.

COMMUNICATION AND INTERPERSONAL SKILLS

Communication and interpersonal skills
Contact skills gained while I was employed as pool animator by Thermana d.d for approximately 18 months.

OTHER SKILLS

Other skills

Experienced paragliding pilot attending world cup competitions.

HONOURS AND AWARDS

Scholarship

World Federation of Scientists [31/01/2021]

Granted a 12 month World Federation of Scientists national scholarship.

CERTIFICATIONS

Certifications

- Quantum programming course presented by *QLatvia Software.*
- Parallel programming workshop at HLRS (Stuttgart).
- Iterative Solvers for Linear Systems at HLRS (Stuttgart).
- Modern scientific C++ at IDRIS.
- ENCCS workshop on CMAKE held by ENCCS.
- CodeRefinery workshop Organized by the Arctic University of Norway.
- Introductioon to GPU programming with OpenACC at IDRIS.
- CFD on HPC: OpenFoam at Faculty of Mechanics at the University of Ljubljana
- Advanced Paraview workshop