Mitja Jančič

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

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WORK EXPERIENCE

01/02/2024 – CURRENT Freiburg, Germany
SOFTWARE DEVELOPERS FIFTY2 TECHNOLOGY GMBH

- Research and development of Smoothed Particle Hydrodynamics (SPH)
- Software development using C++, CUDA, cmake, python
- Catch2 test framework, …

14/11/2017 – CURRENT Laško, Slovenia
SELF-EMPLOYED MITJA JANČIČ S.P.

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.

Downscaling mesoscopic meteorological models using CALMET. Final spatial resolution of meteorologic fields below 100 m.
- CALMET
- Meteorology
- Python implementation
- Analysis

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

28/02/2019 – 01/01/2024 Ljubljana, Slovenia
SCIENTIFIC ASSOCIATE "JOŽEF STEFAN" INSTITUTE

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.
- Adaptive solution procedures.
- Development of methods for efficient solving of PDEs.
- 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.

- GPU programming with CUDA.
- Publication of scientific papers.

31/08/2016 – 30/09/2017 Ljubljana, Slovenia
INTERN "JOŽEF STEFAN" INSTITUTE

- 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"*

30/06/2014 – 14/11/2017 Innsbruck, Austria
ASSISTANT IN R&D NOVA VERTRIEBSGESELLSCHAFT M.B.H.

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

30/09/2019 – 28/03/2024 Ljubljana, Slovenia
DOCTORATE OF SCIENCE Jozef Stefan international postgraduate school

Working on PhD thesis *"Meshless Adaptive Solution Procedure for Efficient Solving of Partial Differential Equations".*
Keywords: meshless, mesh-free, high performance computing, parallelization, thermoelasticity, fluid flow, ...

PhD based on published articles. Most of work done in Python in C++. The main scientific contribution is the development and implementation of an hp-adaptive meshless method.

Website https://www.mps.si/en/ | **Level in EQF** EQF level 8

2014 – 2017 Ljubljana, Slovenia
MASTER OF SCIENCE University of Ljubljana, Faculty of Mechanical Engineering

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

Level in EQF EQF level 7

2010 – 2015 Ljubljana, Slovenia
BACHELOR'S DEGREE IN PHYSICS University of Ljubljana, Faculty of Mathematics and Physics

General physics.

Level in EQF EQF level 6

LANGUAGE SKILLS

Mother tongue(s):   **SLOVENIAN**

Other language(s):

	UNDERSTANDING		SPEAKING		WRITING
	Listening	Reading	Spoken production	Spoken interaction	
ENGLISH	C1	C1	B2	B2	C1
GERMAN	B1	B1	B1	B1	B1
CROATIAN	B2	B2	B1	B1	A2

Levels: A1 and A2: Basic user; B1 and B2: Independent user; C1 and C2: Proficient user

DIGITAL SKILLS

OS

Linux │ Windows │ WSL

Coding

C# │ C++ │ postgresSQL │ Free Pascal │ Python │ Typescript │ Excel VBA │ ASP .NET │ CUDA │
SQL │ Git │ CMake (With Cross Compiling)

Writing

Microsoft Word │ Latex

Others

Abaqus (FEM) │ FreeFem++ │ Wordpress

ADDITIONAL INFORMATION

PUBLICATIONS

Publications
A complete list of publications is easiest to find here: https://bib.cobiss.net/bibliographies/si/webBiblio/
bib201_20240330_100436_52909.html

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

31/01/2021
Scholarship – World Federation of Scientists 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