

## Short curriculum vitae

Born in Opava, Czech Republic

### Academic qualification

#### Ph.D. (2015 – 2023 )

- Field of Study: Computational and Applied Mathematics
- Institution: VŠB – Technical University of Ostrava, Faculty of Electrical Engineering and Computer Science, Department of Applied Mathematics
- PhD thesis: Methods for the solution of differential equations with uncertainties in parameters

#### Ing. (Master's degree, 2013 – 2015)

- Field of Study: Computational Mathematics
- Institution: VŠB – Technical University of Ostrava, Faculty of Electrical Engineering and Computer Science, Department of Applied Mathematics
- Master thesis title: Cross-entropy method as a tool for solution of optimization problems

#### Bc. (Bachelor's degree, 2010 – 2013)

- Field of Study: Computational Mathematics
- Institution: VŠB – Technical University of Ostrava, Faculty of Electrical Engineering and Computer Science, Department of Applied Mathematics
- Bachelor thesis title: Monte Carlo as a tool for the solution of engineering problems

### Work experience

Jul 2023 – now	Academic Staff Member Department of applied mathematics, VŠB – Technical University of Ostrava
Jul 2023 – now	Postdoctoral researcher Institute of Geonics of the CAS, Ostrava, Czech Republic
Jan 2019 – 2023	Research Assistant Department of applied mathematics, VŠB – Technical University of Ostrava
Aug 2014 – Jul 2023	Research Assistant Institute of Geonics of the CAS, Ostrava, Czech Republic
Jul 2015 – Dec 2018	Research Assistant (PhD Student) IT4Innovations, VŠB – Technical University of Ostrava

### Professional interests

- **Partial differential equations with random input parameters** – stochastic Galerkin method, Bayesian inference on parameters of PDEs.
  - **Decomposition of random fields** – numerical approximation of Karhunen-Loève decomposition.
  - **Poroelasticity in fractured porous media** – numerical model with non-linear coupling and contact on fractures.
  - **Machine Learning** – data assimilation, Neural networks as surrogate models.
  - **Development of MATLAB and Python codes and libraries** – iterative methods, preconditioners, libraries for non-linear minimization using automatic differentiation, neural networks.
  - **Geotechnical applications** - stability of slopes; excavation damage zones; nuclear waste repositories.
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