

Curriculum vitae

Dr. Frank Louis Wirner



Professional career

since July 2017

Data Scientist at Tokeya Deep Data Dive GmbH & Co. KG

Main focus: Data analysis and development of AI-based solutions in R (especially neuralnet, keras, kohonen, H2O, Rtsne, caret), software development in C#, JavaScript (especially neural networks)

Dec 2015 - May 2017

Development engineer at Yucoya Energy Safety GmbH in Würzburg

Main focus: ultrasonic measurements in transformer oils, measurement electronics, data evaluation and model development in R (PCA, PLS, neural networks, t-SNE, SOM), software development in C# (MS Visual Studio) and Python, coordination of laboratory analyses, technical support of pilot customers

Academic career

May 2015 - July 2015

Post doctorand at 2nd Physics Institute of the University of Stuttgart

Jun 2010 - May 2015

Doctorate at 2nd Physics Institute of the University of Stuttgart

Doctoral thesis: Flow and transport of colloidal suspensions in porous media

Main focus: soft matter, microfluidics, Langevin simulations, particle tracking, pattern recognition in Matlab (cross correlation, threshold tracking, image processing toolbox), Data and image analysis, High-speed cameras, AODs

Oct 2003 - May 2009

Study of physics at Physics Institute of the University of Karlsruhe

Diploma thesis: Production and characterization of nanostructured point contacts

Main focus: Cryogenic physics, vacuum technology, electron beam lithography, measuring program in C++ (Qt)

Subsidiary subjects: Partial differential equations, fluid mechanics

Skills

Foreign languages English (business fluent), French (basic knowledge)
IT knowledge R, Python, C#, Matlab, Maple, Origin, AutoCAD, COMSOL, C++, Qt, HTML, CSS, JavaScript

Publications

Christian Scholz, Frank Wirner, Juan Ruben Gomez-Solano, and Clemens Bechinger, *Enhanced dispersion by elastic turbulence in porous media*, EPL **107**, 54003 (2014)

Frank Wirner, Christian Scholz, and Clemens Bechinger, *Geometrical interpretation of long-time tails of first-passage time distributions in porous media with stagnant parts*, Phys. Rev. E. **90**, 013025 (2014)

Christian Scholz, Frank Wirner, Jan Götz, Ulrich Rude, Gerd E. Schröder-Turk, Klaus Mecke, and Clemens Bechinger, *Permeability of porous materials determined from the Euler characteristic*, Phys. Rev. Lett. **109**, 264504 (2012)

Christian Scholz, Frank Wirner, Yujie Li, and Clemens Bechinger, *Measurement of permeability of microfluidic porous media with finite-sized colloidal tracers*, Experiments in Fluids **53**, 1324-1333 (2012)