Petr Grigorev

Doctor in Engineering Physics

Profile

During 10 years of research in simulation of complex materials bridging different length and time scales, I developed a set of high technical skills in science and coding. I am an enthusiastic team worker, I like to bring and discuss new ideas.

Skills

Coding and simulation

Simulation methods: Atomistic (*ab initio*, QM/MM, MD, ML), Coarse-Grained (Dislocation Dynamics, Reaction-Diffusion Rate Theory, Finite Element).
Programming: Strong development and operations skills in python, with experience in contributing to large open source projects. Intermediate in compiled languages (C, Fortran).
Environments: Fully efficient on Linux or Windows. Advanced user of UNIX terminals. Experienced in parallel and high performance computing.

Communication

Experienced in written and oral scientific communication. From high-impact scientific articles, to seminars in international conferences and universities (***pgrigorev.github.io***).

Experience

2020 - now: Postdoctoral fellow, CNRS, Aix-Marseille University, France
Development of a cutting edge hybrid *ab initio*-machine learning approach to study interaction of defects and impurities with dislocations in metals. Reaching unprecedented performances for quantum mechanics accuracy and linking the results to the mechanical properties of the material.
2017 - 2020: Postdoctoral fellow, University of Warwick, United Kingdom
Performing large scale atomistic simulations of fracture in materials for nuclear applications. Uncertainty driven parametrisation of radiation damage in a Finite Element-Cellular Automata model.
2012 - 2017 : PhD student, Ghent University, Belgium
Multiscale bottom-up modelling study of hydrogen accumulation, diffusion and retention in tungsten as plasma facing material. A new strategy for experimental plasma exposure campaign was proposed based on the modelling.
2010 - 2012 : Master internship, SCK-CEN, Mol, Belgium
Large scale Molecular Dynamics simulations of sputtering of Si, SiC and Al surfaces by clustered ionic beams. Development of on-the-fly cluster detection algorithm.
2010 (summer) : Bachelor internship, PNPI, Gatchina, Russia
Neutron scattering simulation software was patched and used to optimise existing experimental set up.

Knowledge and Education

2012 - 2017 : Ghent University - PhD in Engineering Physics
2010 - 2012 : Peter the Great St.Petersburg Polytechnic University - Master in Physics
2006 - 2010 : Peter the Great St.Petersburg Polytechnic University - Bachelor in Physics
Education highlights: Scientific programming (C, Fortran,..), Nuclear and Solid State Physics, Quantum Mechanics, Thermodynamics, Linear Algebra.

Personal interests

Biking: I use bikes for my daily commutes and travel by bike for my holidays.
Music and Art: I am an avid music listener and an admirer of graphic art and cinema.

Contact

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Location: Marseilles

Age: 34

Languages


Native


Fluent


Intermediate (actively learning)


Beginner

Profile

Multiscale modelling


Software development


Machine learning


Team working


Communication


Creative thinking