Maksim S. Rakitin

Education

About

Name: Maksim S. Rakitin

Summary: I am a computational scientist at NSLS-II, BNL. I help beamline staff and users run scientific experiments and perform data analysis. I write code in Python to integrate hardware (motors, cameras, detectors, *etc.*) and 3rd-party software systems with the Bluesky data acquisition framework. I am developing the Sirepo-Bluesky library that integrates Bluesky and the Sirepo browser-based interface to scientific modeling codes to enable access to "virtual" beamlines. I am a proponent of well-tested, modular, reusable, sustainable, and easily accessible code. I am fluent with modern CI systems (GitHub Actions, MS Azure Pipelines, *etc.*) I use Docker/Podman (including the creation of images), Linux (RHEL8, CentOS, Ubuntu, *etc.*), vagrant/VirtualBox on a daily basis. I am maintaining over 100 conda-forge feedstocks (Python, Python with C-extensions, C/C++, Fortran). I lead the continuous integration efforts to deploy and test the conda environments with the Bluesky software stack. I am enthusiastic about new technologies and AI/ML projects. I am a PI on an AI/ML LDRD project and a PI for two SBIR subcontracts with Radiasoft LLC (total funds of $1M+).

News: "Computer, Is My Experiment Finished?" (September 16, 2022)
https://www.bnl.gov/newsroom/news.php?a=220832

"Seeing the Forest Through the Trees: Brookhaven Lab Scientists Develop New Computational Approach to Reduce Noise in X-ray Data." (April 18, 2022)
https://www.bnl.gov/newsroom/news.php?a=219533

Links:
- BNL • SBU • SUSU
- @mrakitin • @mrakitin • Google Scholar • ResearchGate
- ORCID: 0000-0003-3685-852X

Education

2008.10–2012.09 **Ph.D. in Condensed Matter Physics (defended on September 19, 2012)**
South Ural State University (National Research University), Chelyabinsk, Russia
Thesis: Study of impurities influence on the hydrogen dissolution energy in the bcc iron
Scientific adviser: Prof. A.A. Mirzoev, Dr. of Sciences

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2006.09–2008.06 **M.S. in Applied Mathematics and Physics (June 13, 2008)**

South Ural State University (SUSU), Chelyabinsk, Russia
Thesis: Computer simulation of influence of structural relaxation and impurities on dissolution energy of H in Fe
Scientific adviser: Prof. A.A. Mirzoev, Dr. of Sciences
GPA: 3.85 / 4.0

2002.09–2006.06 **B.S. in Applied Mathematics and Physics (June 20, 2006), summa cum laude**

South Ural State University (SUSU), Chelyabinsk, Russia
Thesis: Binding energy of hydrogen in bcc iron lattice
Scientific adviser: Prof. A.A. Mirzoev, Dr. of Sciences
GPA: 3.69 / 4.0

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