

# Maksim S. Rakitin

## Computer skills

### 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+).

Links: [BNL](#) • [SBU](#) • [SUSU](#)  
[@mrakitin](#) • [@mrakitin](#) • [Google Scholar](#) • [ResearchGate](#) • [ORCID](#)

### Computer skills

<b>Data analysis, visualization</b>	Python, NumPy, SciPy, Matplotlib, Bokeh, D3.js, Matlab/Octave, OriginPro, gnuplot, VESTA, XCrysDen, STM4, P4VASP, Molden, VMD, RasTop, etc.
<b>Programming</b>	Python (including PyQT, NumPy, SciPy, Matplotlib, PIL), C++, Fortran, Matlab/Octave, JavaScript, jQuery, AngularJS, WebGL, PHP, HTML5, bash, csh/tcsh, make, Perl, Autot3, REXX, SQL, JCL
<b>Parallelization</b>	MPI, OpenMP, Dask
<b>IDE/editors</b>	VSCode, PyCharm, Eclipse, vim, emacs
<b>Writing</b>	L <sup>A</sup> T <sub>E</sub> X, BibT <sub>E</sub> X, TeXlipse/Eclipse, plasTeX, JabRef, MS Word
<b>OS</b>	Linux (CentOS, SuSE, RedHat, Fedora, Ubuntu, Debian, Raspbian, etc.), Mac OS X, AIX, Solaris, HP-UX, Windows, DOS, z/OS
<b>Virtualization</b>	Docker, Vagrant, VirtualBox, VMware
<b>VCS</b>	GitHub, Git, SVN, CVS, Bazaar, Trac
<b>Atomistic simulation</b>	VASP, WIEN2k, Quantum Espresso, CASTEP, SIESTA, CP2K, FHI-aims, QuantumWise, ATK, Tinker, GULP, LAMMPS, DMACRYS, Phonopy, TB-LMTO-ASA