Applied Physics Laboratory   January 19, 2020
Johns Hopkins University
Job ID: 21220

Dear Team Hiring Manager,

As a motivated physicist, I am interested in joining your team to help create physics-based simulations of space-based missions and instruments. I would like to apply for position ID 21220.

I am currently a post-doctoral researcher at the University of California, Berkeley with expertise in simulating and analyzing data from photon and radiation sensors working in the field of particle/nuclear physics.

With regard to my ability to meet the specific requirements of this job:
- **Education:** PhD in experimental particle physics (2016) with emphasis on optical photon and radiation transport as well as photo-sensor simulations, and imaging algorithm development for novel particle detection technologies.
- **Experience developing software in Python/Matlab:** 5 years of experience with Python; some experience with Matlab.
- **Willing/able to learn new programming languages:** Yes.
- **Experience with optical or remote sensing instruments:** Graduate work involves photon transport simulations and optical-sensor modeling of remote neutrino sources as well as hardware development incorporating photo-multiplier tubes to characterize photon yield of scintillators. Post-doctoral work involves modeling and data analysis of vacuum ultra-violet photons and their interaction with wavelength shifters.
- **Able to obtain security clearance:** US citizen.
- **Developed physics-based simulations:** Lead author of Geant4 C++ physics-based detector simulation of mini-TimeCube neutrino detector employing multi-channel plate photo sensors. Code hosted on personal GitHub repository.
- **Written software in a team environment for others:** Worked with 3 multi-national collaborations contributing to simulation/analysis code using version control tools such as Git/SVN/CVS in a team environment.
- **Experience with scientific software systems, data management, or data analysis:** Over 10 years of experience analyzing large-scale simulated/physical data sets using ROOT/Python/C++ and scientific libraries. Experience with scientific simulation tools Geant4, Comsol, SolidWorks, as well as data management using SQL.

I would appreciate an opportunity to meet and discuss my application at an interview. I have also sent my resume for your consideration. Please feel free to let me know if you have any questions.

Thank you for your time,

Michinari Sakai

Michinari Sakai
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