

Dear Team Hiring Manager,

As a motivated physicist, I am interested in joining your team as a computational physicist to pursue challenges relevant to national security in the development of multi-physics simulation codes. I would like to apply for the position.

I am currently a post-doctoral scholar at the University of California, Berkeley with expertise in particle transport simulations working in particle/nuclear physics.

With regard to my ability to meet the specific requirements of this job:

- **Education:** PhD in experimental particle physics (2016) with 6 years of experience working on particle and radiation transport simulations and algorithm development for novel particle detection technologies.
- **Technical mastery:** 8 years of experience working with GEANT4 modeling particle/radiation transport, nuclear decays, photon propagation, and their effects on real hardware.
- **Experience in modeling and algorithm development:** Implemented novel 3-D topological event reconstruction and particle identification algorithms in scintillator detectors. Algorithm evaluated and confirmed using real data. Successfully implemented spectral particle interaction theory into simulation models. Experience modeling nuclear decay and daughter spectrum of radioactive isotopes $^{238}\text{U}/^{232}\text{Th}$, and evaluation with real data.
- **Innovation solving technical problems:** Developed unprecedented algorithm for directional particle detection in scintillator using center of charge and time technique.
- **Programming experience:** Over 9 years of experience with C/C++/ROOT, 4 years of experience with python and FORTRAN working on high-performance clusters at NERSC (Lawrence Berkeley National Laboratory), LNGS (Gran Sasso National Laboratory), and Tohoku University.
- **Communication and presentation skills:** Contributed work published in various journals. Talks given at institutions such as Sanford Underground Research Facility, Fermilab, Argonne National Laboratory. Mentored PhD-level students and increased productivity by organizing group initiatives.
- **Ability to obtain secret clearance:** US citizen.

I would appreciate an opportunity to meet and discuss my application at an interview. I have also sent my resume and other relevant documents 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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