Michinari Sakai

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Summary

- Experience with algorithm development and large-scale data analysis in 3 international physics experiments.
- Expertise in Geant4 physics simulations with 8 years of experience.
- Innovative problem solving skills with the ability to interface original work with larger collaboration.

Experience

UC Berkeley — Post-doctoral Scholar June 2018 — *Current*

- Supervisor for simulation and modeling of photon interactions with wavelength shifters and detector materials.
- Lead researcher for characterization of micro-physical optical properties of wavelength shifter thinfilms.

UCLA — Post-doctoral Scholar 2016 — 2018

- Mentor for 2 PhD students to model and simulate radiation shielding structures to mitigate γ/β backgrounds for ultra-low radiation environments.
- Lead developer of precision α decay spectrum model to improve characterization of backgrounds in ultra-low radiation environments.

University of Hawaii at Manoa — Research Assistant 2009 — 2016

- Spearheaded algorithm development of a novel directional neutrino detection technology in scintillator and demonstrated with data for the first time that this can be applied to conduct indirect dark matter searches in scintillator. First ever physics application of neutrino directionaly in scintillator. Paper in preparation.
- Lead developer of Geant4 detector simulation to conducted case studies of neutron capture doping agents in solid scintillator. Simulation results were later used to oversee detector design and construction.

Skills

Programming Languages:	Proficient in C, C++, Python, Mathematica, Fortran, BASH
Software/Tools:	ROOT (statistical analysis), Geant4 (physics simulation), SolidWorks, AutoCAD, Pads
Human Languages:	English (native), Japanese/Korean (trilingual proficiency)

Leadership

Mentor — *UC Berkeley, UCLA* March 2016 — *Current*

- Advised 2 students with optical physics modeling for current hardware project. Students are now undertaking independent research tasks and contributing original work.
- Taught weekly physics simulation tutorials to 3 PhD-level students for a semester. Students successfully learned to take on independent simulation projects.

Teaching Assistant — *University of Hawaii at Manoa* 2007 — 2009

- Planned coursework and taught 2 weekly physics laboratory curriculum for classes of over 20 students each for 3 semesters. Received especially positive reviews for clarity of explanation of material, and teaching style.

Education

PhD, Experimental Particle Physics 2016

GPA: 4.0/4.0, University of Hawaii at Manoa

Dissertation: High Energy Neutrino Analysis at KamLAND and Application to Dark Matter Search

Double BS, Physics and Mathematics 2005

GPA: 4.3/4.5, Sun Moon University, S. Korea

President's Award 2005, Award for Outstanding Academic Achievement – Samsung Corp.