

MICHINARI SAKAI

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SUMMARY

- Expertise in GEANT4 particle transport simulations with 8 years of experience.
- Experience with cosmogenic radiation and nuclear decay radiation in 3 major particle physics experiments.
- Innovative problem solving skills with the ability to interface original work with larger collaboration.

EXPERIENCE

UC BERKELEY — Post-doctoral Scholar

JUNE 2018 — *Current*

- Lead researcher for characterization of micro-physical optical properties of wavelength shifter thinfilms.
- Supervisor for GEANT4 modeling of photon interactions with wavelength shifters and detector materials.

UCLA — Post-doctoral Scholar

2016 — 2018

- Lead developer of precision α decay spectrum model to improve characterization of backgrounds in $0\nu\beta\beta$ decay searches.
- Mentor for 2 PhD students to simulate radiation shielding structures in GEANT4 to mitigate γ/β backgrounds for next generation $0\nu\beta\beta$ searches requiring ultra-low backgrounds.

UNIVERSITY OF HAWAII AT MANOA — Research Assistant

2009 — 2016

- Spearheaded 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 directionality 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

Software/Tools: GEANT4, ROOT, SOLIDWORKS, AUTOCAD, PADS
Programming Languages: Proficient in C, C++, Python, Mathematica, Fortran, BASH
Human Languages: English (native), Japanese/Korean (trilingual proficiency)

LEADERSHIP

MENTOR — UC Berkeley, UCLA

MARCH 2016 — *Current*

- Advised 2 students with GEANT4 based optical simulation for current hardware project. Students are now undertaking independent research tasks and contribution original work.
- Taught weekly GEANT4 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.