Applying Advanced Analysis and Robotics Tools to Nuclear Security Challenges

Tenzing Joshi, Lawrence Berkeley National Laboratory, thjoshi@lbl.gov
Brian Quiter, Lawrence Berkeley National Laboratory, bjquiter@lbl.gov

Abstract: Over the past decade the Applied Nuclear Physics program within LBNL's Nuclear Science Division has performed work ranging from fundamental detector development to advanced multi-sensor system integration and development of new data fusion concepts. In this presentation we highlight our own backgrounds and how we became interested R&D in this applied field. We then highlight several ongoing efforts where tools from the machine learning and autonomous vehicle community have been joined with advanced radiation detection concepts. We close with our own thoughts about new research directions and the technical skillset necessary to pursue them.