

ALEX HAGEN

(765)-418-4155

ahagen@purdue.edu

 [linkedin.com/in/alexander-hagen](https://www.linkedin.com/in/alexander-hagen)

 github.com/alexhagen

Portfolio - alexhagen.github.io

EDUCATION

Jan. 2009 - Present Purdue University

- ⇒ Doctorate of Philosophy in Nuclear Engineering, *Final Defense in February 2018*
- ⇒ Master of Science in Nuclear Engineering, Minor in Computational Science and Engineering, *August 2014*
- ⇒ Bachelor of Science in Nuclear Engineering, *May 2012*

RESEARCH POSITIONS

May 2018 - Present Data Scientist - Pacific Northwest National Laboratory

- ⇒ Investigated techniques spanning the gap between data science techniques and nuclear detection
- ⇒ Analyzed decision techniques and uncertainty quantification in gamma spectroscopy
- ⇒ Developed custom software to guide design of detectors for treaty verification

May 2012 - Present Graduate Researcher - Metastable Fluid Research Laboratory

- ⇒ Performed successful proof of concepts for 4 new special nuclear material interdiction methods
- ⇒ Developed Tensioned Metastable Fluid Detectors for use in active interrogation for the DHS/DNDO
- ⇒ Developed validation method and multiphysics simulation of Acoustically Tensioned Detector systems

May 2011 - Aug. 2011 Undergraduate Laboratory Intern - Argonne National Laboratory Nuclear Engineering Division

- ⇒ Validated multiphysics fission reactor simulation against legacy codes and experiment

INDUSTRIAL EXPERIENCE

Dec. 2012 - Present Engineering Consultant - Sagamore Adams Laboratories, LLC.

- ⇒ Conceptualized, designed, and characterized 2 novel neutron detector systems that were released to market
- ⇒ Upgraded neutron detection systems per customer requirements for homeland security applications

SELECTED PUBLICATIONS AND CONFERENCE PRESENTATIONS

- ⇒ Hagen, et al. "Detection of Special Nuclear Material in Cargo using Continuous Neutron Interrogation and Tension Metastable Fluid Detector." *Transactions of the American Nuclear Society*, 2016
- ⇒ Archambault, Hagen, et al. "Threshold Rejection Mode Active Interrogation of SNMs... ..with Centrifugal and Acoustic Tensioned Metastable Fluid Detectors." *Transactions of Nuclear Science*, 2016.
- ⇒ Hagen, et al. "Characterization and Optimization of a Tensioned Metastable Fluid Nuclear Particle Sensor Using Laser Based Profilometry." *Journal of Nuclear Engineering and Radiation Science*, 2015
- ⇒ Kautz, Hagen, et al. "A machine learning approach to thermal conductivity modeling: A case study on irradiated uranium-molybdenum nuclear fuels." *Computational Materials Science*, 2019

LEADERSHIP ROLES

- ⇒ Aug. 2012 - May 2017 President of NEGO (Nuclear Engineering Graduate Organization)
- ⇒ Aug. 2014 - May 2016 Chair of Purdue Graduate Student Government (PGSG) Advancement Committee
- ⇒ Aug. 2013 - May 2016 Senator representing Nuclear Engineering to Purdue Graduate Senate
- ⇒ May. 2011 - May 2012 President and Captain of Purdue Men's Club Soccer

HONORS AND AWARDS

- ⇒ Dec 2019 Nominee - PNNL National Security Directorate Author of the Year Award
- ⇒ May 2017 Department of Energy Innovation in Nuclear Technology R&D Award
- ⇒ Nov. 2016 ANS Young Member's Group Best Paper Award
- ⇒ Oct. 2016 IEEE Sensors Conference Demonstration 1st Prize
- ⇒ Apr. 2016 Purdue Engineering Outstanding Service Award
- ⇒ July 2014 Received Best Poster Award and Best Paper Award at Intl. Conference on Nuclear Engineering 22

SKILLS AND REFERENCES AVAILABLE UPON REQUEST