



ALEX HAGEN

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 github.com/alexhagen

Portfolio - alexhagen.github.io

EDUCATION

Jan. 2009 - May 2018 Purdue University

- ⇒ Doctorate of Philosophy in Nuclear Engineering, May 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 - Apr. 2018 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 - Apr. 2018 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

Jan. 2009 - Jan. 2011 Industrial Design Assistant - Steiner Enterprises

- ⇒ Designed, drafted, and prototyped products as part of a small team for the education industry
- ⇒ Developed 6 products from concept to production for the marketplace
- ⇒ Sourced, revised, or formalized the machine drawings and designs of over 30 other products

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

PATENTS

- ⇒ Taleyarkhan, Bakken, Fisher, Hagen, Kosty. Polylactic acid adhesive compositions and methods for their preparation and use. *World Patent # WO2014078720A1*, 2014

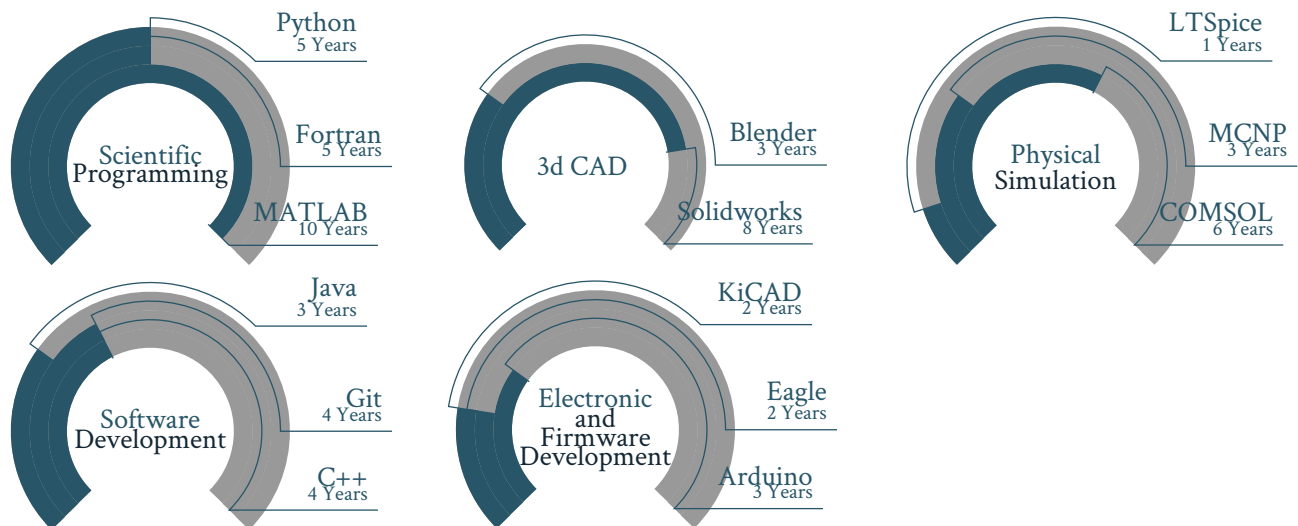
LEADERSHIP ROLES

- ⇒ *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

- ⇒ *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



REFERENCES AVAILABLE UPON REQUEST