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Casey A. Anderson

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Executive Summary

Nuclear engineer, **physicist**, and **programmer** with over six years of experience involving scientific computing, critical thinking, and analytical problem solving. Leader in student organizations, strong collaborator in diverse work environments, demonstrated history delivering products, and effective at communicating and publishing results.

"Put in a quote right here from someone, and its okay if it goes over a few lines thats okay"
Quote Person

Professional Experience

Los Alamos National Laboratory — Los Alamos, New Mexico

Graduate Research Assistant/Post Master's	*NEN-5, Systems Design & Analysis*[1] *ISR-1, Space Science & Applications*[2]	2016-*Present*
Graduate Research Assistant/Post Master's	*W-13, Advanced Engineering Analysis*[3]	2011-2012
Summer Intern	*XCP-3, Monte Carlo Codes*[4]	2010

- Implemented new features in MCNP6 through writing the code, developing benchmarks, publishing reports, and presenting the new features at various conferences [Pubs: **??**,**??**,**??**,**??**][1]
- Acquired significant knowledge and experience in the design, modeling, simulation, and analysis of a variety of radiation detectors for the **Nuclear Detection Figure of Merit (NDFOM)** project[2]
- Transitioned NDFOM from version 2.0 to 3.0 by modularizing and refactoring the backend Python code and through developing a cleaner, more intuiative HTML user interface for the customer[2]
- Utilized SQL databases, managing servers, and utilizing version control using Mercurial[1]
- Assisted in the development, testing, validation, and verification of the combined radiation transport and finite-element analysis multi-physics capability for the **Engineering Campaign-7 Nuclear Survivability** project[3]
- Developed unstructured mesh human phantoms for health physics applications with MCNP6 [Pub: **??**][3]
- Acquired DOE Q-level security clearance and Sigmas 1-10,11,12,13,15 and performed analysis on the W-88 system[3]
- Utilized the high performance computing (HPC) systems and utilities for advanced physics simulations and analysis[1,2,3,4]
- Developed a software visualization package for finite element geometries in MCNP simulations[4]
- Programs: MCNP, Django, HTML, Javascript, SQL, Mercurial, Version Control, Python[1,2,3,4]

Medical College of Wisconsin — Milwaukee, Wisconsin

Graduate Research Assistant	*Department of Biophysics*	2012-2016[1]
Biophysics Representative, IT Liason	*Graduate Student Council*	2014-2016[2]

- Conducted background research, provided the preliminary results, and co-authored a successful **R21** National Institutes of Health (NIH) grant, funding my graduate studies[1]
- Patented a segmented reconstruction technique for artifact reduction in Magnetic Resonance Imaging [Pat: **??**][1]
- Collaborated with a diverse group of professionals, including medical doctors and imaging technologists, to perform clinical research, meet deliverables, and submit the findings to various international conferences [Pubs: **??**,**??**,**??**][1]
- Provided technical leadership and guidance on Information Technology (IT) needs to all MCW Graduate students as the system Liason[2]

University of Wisconsin - Madison — Madison, Wisconsin

Student Research Assistant	*Department of Medical Physics*	2008-2011
Chapter President	*American Nuclear Society (ANS)*	2010-2011

- Assisted in research, modeling, and analysis of brachytherapy seed quality assurance methods
- Managed organizational duties and functionality of our ANS chapter, such as arranging speakers, conference travel, socials, workshops, and meetings
- Mentored students in Science Olympiad, science fairs, and obtaining Boy Scout merit badges

Certifications

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Areas of Expertise

Physics/Engineering

- ● Nuclear Engineering
- ● Fourier Analysis
- ● Monte Carlo Methods
- ◓ Signal Processing
- ◓ Magnetic Resonance Imaging
- ◓ Regularization Methods
- ◓ Radiation Detectors
- ○ Multi-physics coupling
- ○ Computer Aided Engineering
- ○ Finite Element Analysis

Software

- ● MCNP
- ● Abaqus/CAE
- ● Linux
- ● Matplotlib
- ● Matlab
- ● MacOS
- ◓ Windows
- ◓ Microsoft Office
- ○ VisIt
- ○ RELAP

Programming

- ● Python
- ● Bash
- ● LaTeX
- ● Unit Testing
- ● Matlab
- ● Mercurial
- ◓ Git
- ◓ C/C++
- ◓ Fortran
- ○ Java

Other Skills

- ● Technical Writing
- ● Presentations
- ● Leadership
- ● Version Control
- ● File I/O
- ● Scripting
- ◓ Data Visualization
- ◓ Debugging
- ◓ Validation & Verification
- ○ HPC Server Management

Key (*Skill Level*)
● **Expert** ◓ **Intermediate** ○ **Beginner**

Funding Sources

- General Electric / National Football League (GE/NFL) concussion study grant
- Department of Homeland Security (DHS) Deparment of Nuclear Detection Office (DND)
- DHS Nuclear Detection Figure-of-Merit (NDFOM)
- Engineering Campaign 7, Nuclear Survivability

Awards & Honors

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Afilliations

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Education

May 2016 | **M. Sc, Biophysics**, *Medical College of Wisconsin, GPA: 3.80/4.0*
"Quantitative Susceptibility Mapping: Exploratory Development and Initiation of Processing Pipelines"

May 2011 | **M. Sc, Nuclear Engineering & Engineering Physics**, *University of Wisconsin - Madison, GPA: 3.44/4.0*
B. Sc, Nuclear Engineering, *University of Wisconsin - Madison, GPA:3.24/4.0*

Classes & Trainings

I. "MCNP6 Intermediate Workshop", (Los Alamos New Mexico). May, 2016

II. "CPR Certification Training", (Milwaukee, Wisconsin). May, 2015

III. "General Electric MR Programming Workshop", (Madison, Wisconsin). Oct, 2014

IV. "Dale Carnegie Training", (Los Alamos, New Mexico). August, 2011

V. "Introduction to Abaqus", (Minneapolis, Minnesota). June, 2011

VI. "Introduction to Python Programming", (Los Alamos, New Mexico). July, 2010

VII. "MCNP5 Beginner Workshop", (Los Alamos, New Mexico). May, 2010