

J.R. POWERS-LUHN

jpowersl@vols.utk.edu ◊ (757) · 286 · 9023

Department of Nuclear Engineering ◊ University of Tennessee, Knoxville
Nuclear Engineering Building ◊ 1412 Circle Drive ◊ Knoxville, TN 37920

EDUCATION

Ph.D.	University of Tennessee–Knoxville Nuclear Engineering, with a certificate in Nuclear Security	est. 2020
M.E.M.	Old Dominion University Engineering Management	2017
B.S.	University of Virginia Physics	2004

PROFESSIONAL EXPERIENCE

University of Tennessee–Knoxville <i>Graduate Research Assistant / NNSC Fellow</i>	Aug. 2016 - Present <i>Knoxville, TN</i>
--	---

- Developing neural network model to correct misalignment in associated particle imager
- Developing portable, miniaturized associated particle imager for nuclear security

Lawrence Livermore National Laboratory <i>Data Science Summer Intern</i>	May 2019 - Present <i>Livermore, CA</i>
--	--

- Used long short-term memory neural networks to categorize operations for nuclear facilities
- Used machine learning and natural language processing tools to predict molecular and crystallographic properties for new molecules

United States Navy Reserves <i>Lieutenant Commander</i>	May 2011 - Present <i>Washington, DC — Indianapolis, IN — Louisville, KY</i>
---	---

- Officer in charge of 160-sailor unit with 10 direct reports and 150 indirect
- Served as on-watch representative and operations manager for Military Sealift Command ships

Intercap Energy Systems <i>Data Scientist</i>	May 2011 - Aug. 2016 <i>Baltimore, MD and Brighton, TN</i>
---	---

- Developed regression models to predict commercial building load curves
- Developed and deployed Apache Tomcat based product to manage building operations strategies

Commander, Submarine Group Seven <i>Executive Assistant</i>	Aug. 2008 - May 2011 <i>Yokosuka, Kanagawa, Japan</i>
---	--

- Served as executive assistant to admiral in charge of submarine operations in the Western Pacific, Indian Ocean, and Persian Gulf
- Managed communications between emergency nuclear response cell and US-based experts during Fukushima-daiichi meltdown

USS CHARLOTTE <i>Assistant Engineer Officer</i>	Nov. 2005 - Aug. 2008 <i>Norfolk, VA and Pearl Harbor, HI</i>
---	--

- Completed two missions vital to national security
- Qualified Senior Reactor Operator (equivalent)
- Supervised major upgrade of instrumentation and control system

TEACHING EXPERIENCE

University of Tennessee–Knoxville
Graduate Research Assistant in Nuclear Engineering

Aug. 2016 - Present
Knoxville, TN

- NE 530, Nuclear Security (graduate-level)

SELECTED COURSEWORK

- Machine Learning (COSC 528): Derivation and implementation of machine learning algorithms for classification and regression
- Empirical Modeling and Diagnostics (NE 579): Parametric and non-parametric regression techniques, model regularization, and fault detection
- Operations Research (ENMA 603): Deterministic and stochastic models for decision making

COMPUTER SKILLS

Languages	Python, C++
Versioning and Testing	git, PyTest
Tools	Flask, L ^A T _E X, Matlab, Mathematica, vim, bash, Jupyter, MPI, Pandas
Nuclear Software	MCNP

SECURITY CLEARANCE

DoD: Top Secret, SCI eligible
DoE: Q

HONORS AND AWARDS

Navy Achievement Medal	2007, 2008, 2014
Navy Commendation Medal	2008, 2014
Alpha Nu Sigma Honor Society	2016
NSSC Fellow	2016-2018