

Nicholas McNutt

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nickmcnutt.com

(678) 480 7230

INTERESTS Machine learning, data analysis, statistical modeling, non-convex optimization, experimental design, information theory

EXPERIENCE **Data Scientist** (*May 2018 – Current*)
Facebook

- Perform strategic analysis to drive growth of Facebook's infrastructure
- Build and maintain data driven optimization models, experiments, forecasting algorithms, and capacity constraint models

Senior Data Scientist (*November 2017 – May 2018*)
Pilot Flying J

- Optimized fuel prices at 600 travel centers via experimentation and predictive modeling
- Applied statistical modeling to complex data from a variety of sources to extract valuable insights that informed pivotal business decisions

Data Scientist (*March 2017 – November 2017*)
Pilot Flying J

- Established a collaborative, reproducible data science workflow using Airflow and Docker

Research Scientist (*October 2016 – March 2017*)
University of Tennessee

- Functioned as a member of a cross-disciplinary research team to develop improved asphalt binder materials via the use of computational modeling

Graduate Researcher (*August 2012 – August 2016*)
Oak Ridge National Laboratory & University of Tennessee

- Conducted scientific research in collaboration with teams at Oak Ridge National Laboratory to develop improved Li-ion battery anodes via computational modeling
 - Conducted GPU accelerated molecular dynamics simulations of millions of atoms on the Titan supercomputer (fastest in the world ca. 2014)
 - Published eight research articles in peer reviewed journals (four lead-author, four co-author)
 - Gave ten conference presentations across the U.S. (including a Gordon Conference)
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EDUCATION **Ph.D. Chemical Engineering | University of Tennessee**

August 2012 – August 2016 | Knoxville, TN

- Interdisciplinary Graduate Minor in Computational Science
- Advisor: Professor David J. Keffer

B.S. Chemical & Biomolecular Engineering | Georgia Institute of Technology

August 2008 – May 2012 | Atlanta, GA

- Graduated with High Honors

**AWARDS &
HIGHLIGHTS**

Facebook Programming Hackathon (2011)

- 1st place at Georgia Tech and featured on TechCrunch

Featured News Story on Li-ion Battery Research (2014)

- Research write-up on the front page of Oak Ridge National Laboratory's website

Division I Letterwinner (2009 – 2010)

- Two-time letterwinner in cross-country and track & field at Georgia Tech
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**TECHNICAL
SKILLS**

Math & Science Expertise

Statistical modeling, machine learning, data analysis, convex and non-convex optimization, neural networks, numerical simulation, algorithmic information theory, Bayesian analysis, forecasting, anomaly detection, time series analysis, financial modeling, hypothesis testing, signal processing, algorithm development, linear algebra, group theory, quantum chemistry

Computer Programming

Julia, Python, MATLAB, C, C++, Nvidia CUDA, SQL, JavaScript, SQL

Software & Tools

Jupyter, TensorFlow, Airflow, Docker, Git, Gurobi, Mosek

High Performance Computing Systems

Titan, Kraken, Beacon, Google Compute Engine, Amazon Web Services

**SELECT
PUBLICATIONS**

Li-ion Localization and Energetics as a Function of Anode Structure

N.W. McNutt, M. McDonnell, O. Rios, D.J. Keffer
Applied Materials & Interfaces 9 (8), 6988-7002, 2017

Interfacial Li-ion Localization in Hierarchical Carbon Anodes

N.W. McNutt, O. Rios, V. Maroulas, D.J. Keffer
Carbon 111, 828-834, 2017

Rotating Phenyl Rings as a Guest-Dependent Switch in 2D Metal-Organic Frameworks

C.R. Murdock, N.W. McNutt, D.J. Keffer, D.M. Jenkins
Journal of the American Chemical Society 136 (2), 671-678, 2014