Nathaniel Price

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Education

2016 **Joint Ph.D. Mechanical Engineering** University of Florida and École des Mines de Saint-Étienne
Gainesville, Florida, US and Saint-Étienne, Rhône-Alps, France

2014 **Graduate Certificate in Scientific Computing** University of Florida
University of Florida

2014 **M.S. Mechanical Engineering** University of Florida
University of Florida

2012 **B.S. Mechanical Engineering** University of Florida
University of Florida

Experience

May 2020 - present **Senior Data Scientist** ICF
Golden, Colorado, US

- Built Azure cloud computing/machine learning infrastructure from the ground up for low-cost, scalable analysis of billions of records of utility smart meter data
- Researched, prototyped, and deployed machine learning models related to utility analytics (e.g., energy disaggregation, energy savings, EV detection)
- Established cross-team Data Science Knowledge Share meetings to promote collaboration and information sharing
- Assisted other teams in scaling data science processes by advising on best practices and providing technical assistance

Oct 2019 - May 2020 **Data Scientist** ICF
Golden, Colorado, US

Sep 2016 - Oct 2019 **Data Scientist** University of Nebraska-Lincoln
Lincoln, Nebraska, US

- Designed, developed, and deployed open-source, web-based, data analysis application (SQL, R, Shiny) for analyzing repeat-purchase behavior (recruitment, retention, churn, reactivation) of Nebraska sportspersons
- Mentored graduate students and facilitated data science research resulting in multiple journal publications, international conference presentations, and a book chapter

Oct 2014 - Mar 2016 **Ph.D. Student Researcher** ONERA - The French Aerospace Lab
Palaiseau, Île-de-France, France

- As part of international joint-PhD collaboration between 2 universities (UF, EMSE) and ONERA aerospace lab, developed a novel method for optimal design under uncertainty that incorporated risk of future redesign into design optimization
- Co-authored book chapter on advanced space vehicle design under uncertainty

Aug 2012 - Jul 2016 **Graduate Research Assistant** University of Florida
Gainesville, Florida, US

- Integrated machine learning (e.g., Gaussian process) and optimization to design engineering systems considering uncertainty in future decision making process
- Collaboratively developed optimization-based solution to The NASA Langley Multidisciplinary Uncertainty Quantification Challenge (2014)

Sep 2011 - Aug 2012 **Undergraduate Research Assistant** University of Florida
Gainesville, Florida, US

- Created parameterized biomechanical model in Python to understand interactions of patient variability and design changes on safety of Biomet rigid sternal fixation device
- Awarded Biomedical Engineering Society (BMES) Design and Research Award and Knox T. Millsaps Outstanding Undergraduate Paper Award

Aug 2010 - Jan 2011 **Launch Engineer Intern** SpaceX
Cape Canveral, Florida, US

- Performed maintenance of launch vehicle ground systems
- Ground crew team member during launch of SpaceX COTS Demo Flight 1

Data Science Skills

Cloud Computing: Azure ● AWS ● high-performance computing (Azure Batch) ● NoSQL (Azure Table/Blob, AWS S3) ● containers (Docker, Azure ACI, Azure ACR)
Communication: presentations ● dashboard design (Shiny) ● data analysis reports (Rmarkdown, Jupyter) ● data visualization (plotly, ggplot2, leaflet) ● peer-reviewed publications (journal, book chapter, conference)
Numerical Methods: optimization (stochastic, genetic, multi-start) ● differential equations
Programming Languages: R ● Python ● SQL ● Matlab ● C++
Software Development: source control (Git, SVN) ● agile development (Jira) ● CI/CD (Azure DevOps) ● automated testing
Statistics: machine learning ● data analysis ● surrogate models ● cross-validation ● uncertainty quantification ● Monte Carlo simulation ● experimental design ● survey methodology

Publications

2 book chapters
5 peer-reviewed journal publications
5 conference papers
3 open-source software packages
Full List Available on Google Scholar: https://scholar.google.com/citations?hl=en&user=rXaKU0EAAAAJ

Open Source Software

1. Price, N., Chizinski, C., & Burnett, J. (2019). *Radsets - An R Package for creating Radial Sets diagrams*. https://natbprice.github.io/radsets/
2. Price, N., & Burnett, J. (2019). *Tvdiff - An R Package for performing total variation regularized differentiation*. https://github.com/natbprice/tvdiff
3. Price, N., & Chizinski, C. J. (2019). *Huntfishapp - A web-based, exploratory data analysis application for hunting, fishing, and outdoor recreation sales data*. https://chrischizinski.github.io/huntfishapp/

Select Publications

1. Price, N. B., Chizinski, C. J., Fontaine, J. J., Pope, K. L., Rahe, M., & Rawlinson, J. (2020). An open-sourced, web-based application to improve our ability to understand hunter and angler purchasing behavior from license data. *PLOS ONE*, *15*(10), e0226397. https://doi.org/10.1371/journal.pone.0226397
2. Hinrichs, M. P., Price, N. B., Gruntorad, M. P., Pope, K. L., Fontaine, J. J., & Chizinski, C. J. (2020). Understanding Sportsperson Retention and Reactivation Through License Purchasing Behavior. *Wildlife Society Bulletin*, *44*(2), 383–390. https://doi.org/https://doi.org/10.1002/wsb.1088
3. Balesdent, M., Brevault, L., Price, N. B., Defoort, S., Le Riche, R., Kim, N.-H., Haftka, R. T., & BÃ©rend, N. (2016). Advanced Space Vehicle Design Taking into Account Multidisciplinary Couplings and Mixed Epistemic/Aleatory Uncertainties. In G. Fasano & J. D. PintÃ©r (Eds.), *Space Engineering: Modeling and Optimization with Case Studies* (pp. 1–48). Springer International Publishing. https://doi.org/10.1007/978-3-319-41508-6_1
4. Chaudhuri, A., Waycaster, G., Price, N., Matsumura, T., & Haftka, R. T. (2015). NASA Uncertainty Quantification Challenge: An Optimization-Based Methodology and Validation. *Journal of Aerospace Information Systems*, *12*(1), 10–34. https://doi.org/10.2514/1.I010269 doi: 10.2514/1.I010269