

Mark Paluta

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<https://github.com/mpaluta>

SOFTWARE:

Languages: Python, R

Tools: SQL, Git, Neo4j

OS: Windows, Linux

CORE COMPETENCIES:

Machine Learning:

- ◆ Supervised and unsupervised learning
- ◆ Deep learning
- ◆ Natural language processing
- ◆ Reinforcement learning and Markov decision processes

Applied Mathematics:

- ◆ Linear, logistic, and multinomial regression
- ◆ Descriptive and inferential statistics
- ◆ Design and conduct of experiments
- ◆ Time series analysis and forecasting
- ◆ Optimization and genetic algorithms
- ◆ Operations research
- ◆ Game theory
- ◆ Linear and nonlinear dynamical systems and analysis

Software Engineering:

- ◆ Data structures and algorithms
- ◆ Querying
- ◆ Backend development
- ◆ Quality assurance and unit testing
- ◆ Agile methodologies

PUBLICATIONS:

- ◆ MJ Bilka, MR Paluta, JC Silver, SC Morris - Experiments in Fluids (2015). *Spatial correlation of measured unsteady surface pressure behind a backward-facing step.*

SUMMARY:

Research scientist with 5 years of experience across mathematical modeling, experimentation, and engineering. Experienced in both production and research environments. Capable communicator skilled in presenting to non-technical audiences. Lifelong learner, empathic thinker, and decision-making enthusiast.

EDUCATION:

University of California, Berkeley **Dec. 2019**
Master of Information and Data Science (MIDS)

Stanford University **Dec. 2015**
M.S., Aeronautics and Astronautics

University of Notre Dame **May 2014**
B.S., Aerospace Engineering, *magna cum laude*

EXPERIENCE:

Convoy **Nov 2019 – Present**
Research Scientist *Nov 2019– Present*

- ◆ Build predictive and optimization models to ensure shipment success.

Boeing **Feb 2016 – Oct 2019**
Data Scientist *Jan 2019 – Oct 2019*

- ◆ Deployed prognostics models and reduced unscheduled maintenance burden on airlines.
- ◆ Invented tool for automated aggregation and cleaning of component history data.

Software Engineer *Sept 2018 – Jan 2019*

- ◆ Architected user permissions system in Python and Neo4j, including read and write access, military restrictions, and admin rights for enterprise manufacturing application with future 10,000+ user base.

Lead Quality Engineer *April 2017 – Sept 2018*

- ◆ Led a team of 13 engineers on data analysis of fuselage automation center health. Designed experiments, sampling plans, and statistical models to improve production quality; eliminated four major chronic defects each costing \$10k+ per airplane.
- ◆ Strategically informed executive-level business decisions by visualizing and presenting production quality data; made recommendations regarding risks and opportunities.
- ◆ Achieved maximum performance score in first year, ranked in top tier of organizational retention, and earned accelerated promotion due to technical achievement.

Product Review Engineer *Feb 2016 – April 2017*

- ◆ Assumed sole responsibility for integrity of ~300 repairs for 20+ year airplane lifetime.

SELECTED PROJECTS:

[Headline Generation with Sentiment](#), University of California, Berkeley

Applied novel sentiment-based preprocessing technique prior to text summarization algorithm. Demonstrated improvement in sentiment score without sacrificing summarization score.

[Quadrotor Reinforcement Learning Research](#), Stanford University

Designed simulation of quadrotor UAV in MATLAB and implemented from-scratch reinforcement learning; learned behavior comparable to PID controller.

[Tetris Reinforcement Learning](#), Stanford University

Implemented Tetris RL algorithm in Python and outperformed lowest-center-of-gravity baseline.

[Appliance Scheduling Optimization](#), Stanford University

Optimized residential appliance scheduling for earliest completion time using ant-colony optimization in Python; baselined results against duration-sorting algorithms.