DANIEL ROY MILLER

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EDUCATION

Stanford University
- Ph.D. Electrical Engineering. 2019
- M.S. Electrical Engineering, 2016

Dissertation Title — Machine Learning and Control Methodologies with Applications to Medical Computing

Selected Coursework

NLP & Deep Learning (CS 224N)	Artificial Intelligence (CS 221)
Machine Learning (CS 229)	Modern Applied Statistics (STATS 315a/b)
Convex Optimization (EE 364A)	Linear Programming (MS&E 310)

Texas A&M University
Summa Cum Laude
- B.S. Electrical Engineering, 2014 — *Engineering Scholar*
- B.S. Applied Mathematical Science, 2014 — *Honors in Mathematics*

RELEVANT WORK AND RESEARCH HISTORY

Lucile Packard Children's Hospital   *Research Assistant*   2016-2019
- Created large de-identified research dataset for pediatric physiological waveform data
- Supported development of a critical care pathway for congestive heart failure (CHF) patients.
- Supported diabetes care providers by automating tasks using data analytics and machine learning.
- Developed tools to examine medication administration records on a patient, physician, or department level.

Texas A&M Undergraduate Thesis   *Solar Water Heating — Advisor: Dr. Jean Marie Linhart*   2015
- Constructed a mathematical model of a solar water heater and developed an optimized control scheme.
- Designed, fabricated, and implemented a circuit board for system sensing, motor control, and data logging.
- Performed statistical analysis and simulation to optimize and predict system behavior.
- *Society for Industrial and Applied Mathematics award for best student presentation, MAA MathFest 2013&14.*

Silicon Laboratories: Microcontroller & Wireless Applications   *Electrical Engineering Intern*   2012, 2014
- Wrote a firmware library for 8-bit C8051 microcontrollers to interface with host virtual serial ports over USB
- Designed a USB relay switchboard for automated connect and power control of multiple devices under test.
- Created a webcam-based remote demonstration application to test MCU sleep-mode performance.
- Developed low-power firmware examples for ARM Cortex M3 line of microcontrollers.

MIT Lincoln Laboratory: Cyber Systems and Operations   *Electrical Engineering Intern*   2013
- Wrote and implemented control modules for ROS Robot Operating System in Python, C++, XML, and Bash.
- Implemented Simultaneous Localization and Mapping (SLAM) and autonomous path-planning protocols.
- Developed an autonomous platform for testing wireless geolocation techniques with a software-defined radio.

Ascendant Engineering Solutions   *Electrical Engineering Intern*   2011
- Designed and fabricated the motor control system circuit board for a hexapod robotic platform.
- Developed custom MCU and CPLD firmware for 6-DOF positional and trajectory control.

TECHNICAL SKILLS

- **Programming:** Python, R, Embedded C, MATLAB · TensorFlow, PyTorch
- **Machine Learning:** Deep Learning, Medical Applications, Physiological Data, CNNs, RNNs, NLP
- **Applied Math:** Monte Carlo Sim., POMDPs, Linear/Convex Optimization, Dynamic Programming

HONORS AND AWARDS

- 2014 Stanford Graduate Fellowship: Sequoia Capital Fellow
- 2014 NSF Graduate Research Fellowships Program: Honorable Mention
- 2013 Goldwater Scholar

SELECTED RESEARCH PUBLICATIONS

Improving Predictions of Pediatric Surgical Durations with Supervised Learning. Master, N., Zhou, Z., Miller, D., Scheinker, D., Bambos, N. and Glynn, P.. *International Journal of Data Science and Analytics (JDSA)*. 2017

Service Rate Control of Tandem Queues with Power Constraints. Xia, L., Miller, D., Zhou, Z. and Bambos, N.. *IEEE Transactions on Automatic Control (TAC)*. 2017

A Practical Approach to Machine Learning for Clinical Decision Support. Miller, D., Scheinker, D. and Bambos, N.. *International Conference on Health Care Systems Engineering (HCSE)*. 2017

Optimal Sensing for Patient Health Monitoring. Miller, D., Zhou, Z. Bambos, N and Ben-Gal, I.. *IEEE International Conference on Communications (ICC)*. 2018

Personalized Diabetes Management Using Data from Continuous Glucose Monitors. Miller, D., Ward, A., Prahalad, P., Maahs, D., Scheinker, D.. *79th American Diabetes Association Scientific Session (ADA)*. 2019