

Daniel J. Saunders

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EDUCATION

University of Massachusetts Amherst
M.S., Computer Science
GPA : 3.85

Spring 2017 - Spring 2019

University of Massachusetts Amherst
B.S., Computer Science
Concentration in Computation Theory, Artificial Intelligence
B.S., Mathematics
Concentration in Mathematical Computing
GPA : 3.5

Fall 2012 - Fall 2016

RESEARCH

Research Intern - Air Force Research Lab, Automatic Target Recognition Center

Summer 2017

- Implemented a neural network layer which updated its weights through Hebbian learning
- Continued development of Q-matrix computation and classification from previous summer's efforts

Advisor: Professors Roman Ilin and Robert Kozma

Graduate Research Assistant - BINDS Laboratory

Spring 2017 - Present

Machine Learning with Spiking-Timing-Dependent Plasticity (Working title)

- Led project on training of spiking neurons with spike-timing-dependent plasticity
- Compiled quarterly DARPA progress reporting documentation

Advisor: Professor Robert Kozma

Independent Study - BINDS Laboratory

Spring 2016

A Review and Discussion of Memcomputing Machines

- Manuscript reviewing and discussing the memcomputing model of computation and digital simulations
- Unpublished, available on personal website
- Oral presentation at the weekly UMass CICS theory seminar.

Advisors: Professors Hava Siegelmann and David Mix Barrington

Independent Study - Circuit Complexity

Fall 2015

The Complexity of Constant-Depth Circuits with MOD_6 Gates

- Manuscript with definitions, theorems, and proofs concerning the computational complexity of constant-depth circuits with MOD_6 counting gates

- Unpublished, available on personal website
- Oral presentation at the weekly UMass CICS theory seminar

Advisor: Professor David Mix Barrington

EXPERIENCE

- Programmer May 2016 - Present
 UMass Department of Resource Economics
 Supervisor: Professor Christian Rojas
- Programmer / Technician August 2015 - February 2017
 UMass Department of Psychological and Brain Sciences - Cognition and Action Laboratory
 Supervisor: Professor Rebecca Spencer
- Programmer Summer 2016
 Biologically Inspired Neural and Dynamical Systems
 Supervisor: Professor Hava Siegelmann
- Software Engineering Intern Summer 2015
 Epsilon Data Management

SERVICE AND LEADERSHIP

- University of Massachusetts - Amherst Graduate Researchers in Data
 Chief Technical Officer Fall 2017 - Present
- University of Massachusetts - Amherst Computer Science Graduate Organization
 Graduate Employment Office Ambassador Spring 2017 - Present
- University of Massachusetts - Amherst Marching Band
 Snare Drummer Fall 2012 - Spring 2016

AWARDS, HONORS, GRANTS

- University of Massachusetts - Amherst Dean's List (Three Semesters)

PROGRAMMING LANGUAGES

- Proficient in Python, Java, and MATLAB
 Experience with shell scripting, C / C++, SQL, JavaScript, Visual Basic

RELEVANT GRADUATE COURSEWORK

- Deep Learning (CS 697L, University of Massachusetts - Amherst)
- Machine Learning (CS 689, University of Massachusetts - Amherst)
- Artificial Intelligence (CS 683, University of Massachusetts - Amherst)
- Mathematical Statistics (STAT 607, University of Massachusetts - Amherst)
- Computation Theory (CS 601, University of Massachusetts - Amherst)
- Independent Study - Career Paths Analysis (CS 697L, University of Massachusetts - Amherst)