

MICHAEL NEUDER

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EDUCATION

University of Colorado, College of Arts and Sciences

Bachelor's in Computer Science, Bachelor's in Mathematics

August 2015 - May 2020

Boulder, CO

- Computer Science GPA: 3.97 – Overall GPA: 3.82
- Studied abroad at University of Oxford, UK, Spring 2018
- Elected member of the Phi Beta Kappa Society Junior Year
- Honorable Mention in the Computing Research Association's [2019 Outstanding Undergraduate Researcher Award](#)

INDUSTRY EXPERIENCE

Google

Software Engineering Intern

September 2018 - December 2018

Sunnyvale, CA

- Worked as a fall intern with the Google Endpoint Management Team writing application recommendation software
- Used state of the art Natural Language Processing algorithms to rank applications based on descriptions
- Integrated algorithms into production for Mobile Device Management on the G Suite Platform

Lockheed Martin / Laboratory of Atmospheric and Space Physics

Software Engineering Intern

Feb 2017 - Oct 2017

Boulder, CO

- Developed user friendly graphical applications using Python and C++ Qt Libraries
- Wrote interactive terminal applications using Perl and the Curses Module
- Developed graphical application testing suites using EggPlant Functional software and the SenseTalk language

RESEARCH EXPERIENCE

Santa Fe Institute

Undergraduate Research Fellow

June 2018 - August 2018

Santa Fe, NM

- Participated in the 2018 Research Experience for Undergraduates (REU) program
- Created algorithms to extract animal paths from drone footage despite small animal size and camouflage
- Developed new Convolutional Neural Networks to leverage frame sequence information in animal location

Department of Computer Science, University of Colorado

Research Assistant in the lab of Dr. Elizabeth Bradley

April 2017 - Present

Boulder, CO

- Worked collaboratively with an interdisciplinary research group to analyze time series climate data
- Developed and maintained the code base for the processing, analysis, and visualization of data
- Implemented modified algorithms to calculate information theoretic metrics over the time series data

Institute of Cognitive Science, University of Colorado

Research Assistant in the lab of Dr. Mike Mozer

March 2017 - Present

Boulder, CO

- Implemented deep neural nets to analyze information content of text and predict human reading time
- Created deep Convolutional Neural Networks to evaluate image quality based on state of the art Computer Vision metrics
- Fine tuned networks on human perception data to increase flexibility and accuracy of models

PUBLICATIONS

- J. Garland, T. Jones, M. Neuder, V. Morris, J. W. C. White, E. Bradley, "[Anomaly Detection in Paleoclimate Records using Information Theory](#)," *Entropy* **20**:931 (2018).
- M. Neuder, M. Mozer, "Image Evaluation Using Deep Learning," Accepted, *Colorado Journal of Applied Mathematics*, [preprint](#).
- J. Garland, T. Jones, E. Bradley, M. Neuder and J. W. C. White, "Climate Entropy Production Recorded in a Deep Antarctic Ice Core", In revision, *PLoS ONE*, [arxiv preprint](#).

PROJECTS

[Image Quality Analysis](#)
[Connect Four](#)
[She](#)

Code written to conduct research for Dr. Mozer in Python using Tensorflow

A graphical implementation of the game in PyQt

A web app girlfriend simulator written in Ruby on Rails framework

TECHNICAL STRENGTHS

Programming Languages (Experienced)

Python, C++, Perl, Java

Programming Languages (Proficient)

SQL, Ruby, R, Javascript, MATLAB, bash, CSS, HTML

Tools

git, TensorFlow, CUDA, Linux, macOS, Jupyter, LaTeX, Travis CI, Heroku