MICHAEL NEUDER

(719) 659-3861 ◇ michael.neuder@gmail.com ◇ https://michaelneuder.github.io

EDUCATION

University of Colorado, College of Arts and Sciences — August 2015 - May 2020
Bachelor's in Computer Science, Bachelor's in Mathematics — *Boulder, CO*

- Computer Science GPA: 3.97 – Overall GPA: 3.85
- 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 — May 2019 - August 2019
Software Engineering Intern – Google Flights — *Cambridge, MA*

- Built an internal tool to interact with airline data in the Flights ecosystem that cuts look up time by 100%
- Created a multi-threaded SQL Engine which improved query response time by $10x$ using async channels

Google — September 2018 - December 2018
Software Engineering Intern – Google Cloud — *Sunnyvale, CA*

- Built an automated pipeline which collects and cleans data, then trains and deploys a machine learning model
- Integrated NLP algorithms into production for Mobile Device Management on the G Suite Platform

Lockheed Martin & Laboratory of Atmospheric and Space Physics — Feb 2017 - Oct 2017
Software Engineering Intern — *Boulder, CO*

- Created user friendly graphical applications using Python and C++ Qt Libraries
- Developed graphical application testing suites using EggPlant Functional software and the SenseTalk language

RESEARCH EXPERIENCE

Parkes Lab, Harvard University — August 2019 - December 2019
Research Assistant under supervision of Dr. David Parkes and Daniel Moroz — *Cambridge, MA*

- Studying off-policy deviations from the Proof of Stake and Proof of Work consensus protocols
- Exploring and categorizing the types of Smart Contracts being executed on the Ethereum blockchain.

Santa Fe Institute — June 2018 - August 2018
Undergraduate Research Fellow: Summer 2018 REU — *Santa Fe, NM*

- Created algorithms to extract animal paths from drone footage despite small animal size and camouflage
- Explored the research space of object tracking using software packages including YOLO and Faster RCNN

Bradley Lab, University of Colorado — April 2017 - Present
Research Assistant under supervision of Dr. Elizabeth Bradley — *Boulder, CO*

- Collaborated with an interdisciplinary research group to analyze time series climate data using information theory
- Developed and maintained the code base for the processing, analysis, and visualization of data

Mozer Lab, University of Colorado — March 2017 - Present
Research Assistantunder supervision of Dr. Michael Mozer — *Boulder, CO*

- Implemented deep neural nets to analyze information content of text and predict human reading time
- Created Convolutional Neural Networks to evaluate image quality based on Computer Vision metrics

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," *Colorado Journal of Applied Mathematics* **Fall 2018 Edition**:43-54 (2018).
- J. Garland, T. Jones, E. Bradley, **M. Neuder** and J. W. C. White, "Climate Entropy Production Recorded in a Deep Antarctic Ice Core", Submitted, *Chaos*, arxiv preprint.

PROJECTS

Image Quality Analysis	Code written to conduct research for Dr. Mozer in Python using Tensorflow
She	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