# MICHAEL NEUDER

michaelneuder.github.io – michael.neuder@gmail.com – google scholar page

## EDUCATION

**University of Colorado, College of Arts and Sciences** 2015 - 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
- Honorable Mention in Computational Research Association's Undergrad Research Award

## INDUSTRY EXPERIENCE

**Google** May 2020 - August 2020
*Software Engineering Intern* *TBD*

- Incoming Summer 2020 intern

**Google** May 2019 - August 2019
*Software Engineering Intern – Google Flights* *Cambridge, MA*

- Built a tool to interact with internal airline data that reduces 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 machine learning models
- Integrated NLP algorithms into the Mobile Device Management system 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 Assistant under 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**, J. W. C. White, "Climate Entropy Production Recorded in a Deep Antarctic Ice Core," *Chaos*, **under review**.

## PROJECTS

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| **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

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| **Programming Languages (Experienced)** | C++, Python, Perl, Java |
| **Programming Languages (Proficient)** | SQL, Ruby, R, Javascript, MATLAB, bash, CSS, HTML |
| **Tools** | git, TensorFlow, CUDA, Linux, macOS, Jupyter, LaTeX, Travis CI |