MICHAEL NEUDER

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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 that cuts look up time by 100% and allows for simple manual overrides
- Created a multi-threaded SQL Engine which improved query response time by $10x$ by sending matching results async

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

- Built an automated pipeline which collects and cleans data, and 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 — *Cambridge, MA*

- Conducting research on off-policy deviations from the proof of stake protocol using reinforcement learning
- Advised by Dr. David Parkes and Dan Moroz in the Dept. of Computer Science

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 state of the art software packages including YOLO and Faster RCNN

Bradley Lab, University of Colorado — April 2017 - Present
Research Assistant — *Boulder, CO*

- Worked collaboratively 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 — *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

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