# 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: 3.82
- 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** — May 2019 - August 2019
*Software Engineering Intern* — *Cambridge, MA*

- Incoming Summer Intern with the Flights Availability team

**Google** — September 2018 - December 2018
*Software Engineering Intern* — *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** — Feb 2017 - Oct 2017
*Software Engineering Intern* — *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** — June 2018 - August 2018
*Undergraduate Research Fellow* — *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** — April 2017 - Present
*Research Assistant in the lab of Dr. Elizabeth Bradley* — *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** — March 2017 - Present
*Research Assistant in the lab of Dr. Mike Mozer* — *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

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|---|---|
| **Image Quality Analysis** | Code written to conduct research for Dr. Mozer in Python using Tensorflow |
| **Connect Four** | A graphical implementation of the game in PyQt |
| **She** | A web app girlfriend simulator written in Ruby on Rails framework |

## TECHNICAL STRENGTHS

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| **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 |