MICHAEL NEUDER

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PERSONAL STATEMENT

I am a Computer Science and Mathematics undergraduate studying at the University of Colorado at Boulder. My technical skills as well as my industry and academic experience make me an excellent candidate for the Fall Electronics Development Internship, but more importantly I know that my personality and reliability would be a perfect fit for the culture of Ansys.

EDUCATION

University of Colorado Aug 2015 - Present
B.A. Computer Science, B.A. Mathematics *Boulder, CO*

- Overall GPA: 3.82 - Computer Science GPA: 3.97.
- Expected Graduation: May 2019.

University of Oxford Jan 2018 - June 2018
Visiting Scholar *Oxford, UK*

- Studying abroad for Spring semester of 2018.
- Coursework in Probability, Statistics, and Numerical Analysis.
- First Class Honors in all coursework taken.

INDUSTRY EXPERIENCE

Laboratory for Atmospheric and Space Physics / Lockheed Martin Feb 2017 - Nov 2017
Software Engineering Intern *Boulder, CO*

- Joint program between the Laboratory of Atmospheric Space Physics and Lockheed Martin where University of Colorado students are trained in the skills necessary to start a career at Lockheed Martin.
- Developed graphical applications using Python and C++ Qt Libraries.
- Wrote interactive terminal applications using Perl and the Curses Module.
- Developed graphical application testing suites.

RESEACH EXPERIENCE

Department of Computer Science March 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 Science data from an information theoretic framework.
- Developed and maintained the code base for the project using Python.
- Created publication style figures for visualizing the data and results.
- Implemented a specialized entropy metric to analyze shared information between two time series data sets to study correlation of climate across hemispheres.

Institute of Cognitive Science 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 patterns.
- Built classifiers and clustering analysis tools to train models on unlabeled data.

- Created deep parallel convolutional neural networks to replicate the Multi-Scale Structural Similarity score of sets of images in order to embody a more accurate image quality evaluation metric.
- Created visualizations of network parameters and outputs using Python.

Santa Fe Institute June 2018 - Aug 2018
Research Experience for Undergraduates *Santa Fe, NM*

- Will spend summer researching under the supervision of Dr. Joshua Garland.
- Plan to build novel model-based reinforcement learning algorithms to maintain a stock market portfolio.
- Will leverage nonlinear dynamics to predict real time market behavior during learning process.
- Scrape, clean, and maintain large intraday market data sets at different temporal resolutions.

AWARDS

- Sewell Esteemed Scholars Award: Scholarship given by CU for academic excellence.
- Phi Beta Kappa Honor Society: Selected Junior year to become a member.
- Dean's List: Recognition given to CU Boulder students who complete a full time academic semester with a GPA of 3.75 or above.
- CU Honors Program: Lived in the Honors Residential Academic Program and participated in the Honors Community events.
- Visiting Scholar Award: Given to students who are selected from application pool to attend the University of Oxford as visiting scholars.

PROJECTS

Image Quality Analysis	Code written for machine learning and image analysis research.
Numerical Experiments	A series of numerical analysis experiments written in Python.
Rubik's Cube Solver	Wrote a program in C++ that solves a cube from any scrambled position.
Python vs C++	Created benchmark runtimes of programs in both languages.
she	Wrote a web application with Ruby on Rails to simulate a virtual girlfriend.
Connect Four	Created a graphical implementation of the game in PyQt.
Hack CU 2017	Took part in hackathon and modeled the spread of infectious disease.

TECHNICAL STRENGTHS

Programming Languages (Experienced)	Python, C++, Perl
Programming Languages (Proficient)	Ruby, R, Javascript, Matlab, bash, CSS, HTML
Libraries (Python)	numpy, scipy, matplotlib, tensorflow, scikit-learn, Qt
Tools	git VCS, SQL, LaTeX, Linux, Jupyter Notebooks