Lodewijk **Brand**

Ph.D. Student · Colorado School of Mines · Active Security Clearance (SECRET)

1500 Illinois Street, Golden, CO 80401

(443) 414-9731 | lodewijk.brand@gmail.com | LodewijkBrand

Education

Colorado School of Mines   *Golden, Colorado*

P.hD. Student, Computer Science   *Aug. 2017 - Present*

- **Machine Learning Research,** *MInDs @ Mines*
  - Designed an algorithm to utilize MRI brain scans and genetic information to predict the progression of Alzheimer's Disease.
  - Recently submitted the *"Joint High Order Regression and Classification"* algorithm for predicting Alzhiemer's Disease to *Bioinformatics*.

Colorado College   *Colorado Springs, Colorado*

B.A. in Computer Science and Computational Chemistry - *magna cum laude*   *Aug. 2011 - May 2015*

- **Thesis:** *Neural Networks, Genetic Algorithms and the Blood-Brain Barrier.*
  - Analyzed the effects of genetic algorithms on the performance of multi-layered neural networks.
  - Created an application to predict the blood-brain barrier permeability of chemical compounds using a neural network.

Work Experience

Colorado School of Mines   *Golden, Colorado*

Teaching/Research Assistant   *Aug. 2017 - Present*

- **Leadership**
  - Introduced undergraduate students to the processes related to research, from software development to publication.
  - Fostered a collaborative research environment through the effective use of GitLab, Mendeley, Slack, and face-to-face interaction.
- **Teaching**
  - Supported an introductory Fortran class during lab and office hours.
  - Responsible for grading assignments in Fortran, Web Programming, and Algorithms

Northrop Grumman   *Colorado Springs & San Diego, USA*

Software Engineer, Professional Development Program   *Aug. 2015 - June 2017*

- **Embedded Software**
  - Developed and designed the initial prototype for a cross-domain-solution on a Xilinx Ultrascale+ using NSA software guidance principles.
  - Fostered a team-oriented development environment for new engineers in *San Diego, California*, *Beaver Creek, Ohio* and *Orlando, Florida*.
  - Presented technical approach to internal customers.
- **Modeling & Simulation**
  - Developed algorithms in C# and Java for autonomous way-point navigation in a Unity3D simulation.
  - Leveraged a novel machine learning algorithm to speed up a legacy software application by *three orders* of magnitude.
  - Presented algorithmic approach to government customers from a Department of Defense Agency.

Presentations

Neural Networks, Genetic Algorithms, and the Blood-Brain Barrier   *Colorado & Maryland, USA*

Seminar Presentation   *Jan. 2015*

- Presented to Dr. Michael Johnston's lab at the Kennedy Krieger Institute in *Baltimore, Maryland*.
- Presented to employees at the National Institute of Standards and Technology in *Gaithersburg, Maryland*.
- Selected speaker as part of a *Mellon Foundation Grant* to Air Force Cadets and Colorado College students in *Colorado Springs, Colorado*.

Awards

2017	**Travel Grant,** Advanced Computing for Social Change Institute ($1,500)	*Denver, Colorado*
2011-15	**Scholarship,** Colorado College Trustee Scholar ($30,000)	*Colorado Springs, Colorado*
2014	**Lecture Series,** "Speakers on Innovation" ($3,000)	*Colorado Springs, Colorado*
2013-14	**Research Grant,** Student-Faculty Collaborative Research ($8,000)	*Colorado Springs, Colorado*

Skills

Programming	Python, C/C++, C#, Java, LaTeX, Fortran, git, bash, buildroot, Gradle, TensorFlow, MATLAB
Teamwork	Agile, Communication, Leadership, Mentoring, Initiative
Languages	English, Dutch