

# Arnu Pretorius

arnupretorius@gmail.com

## EDUCATION

### STELLENBOSCH UNIVERSITY

PHD IN COMPUTER SCIENCE  
Apr 2017 - Present

### MCOMM IN MATHEMATICAL STATISTICS

Jan 2015 - Dec 2016 | Cum laude

### BComm (HONS) MATHEMATICAL STATISTICS

Jan 2014 - Dec 2014 | Cum laude

### BComm MATHEMATICAL SCIENCES

Jan 2011 - Dec 2013

## LINKS

Website:// [arnupretorius](#)

Github:// [arnupretorius](#)

LinkedIn:// [arnupretorius](#)

## CERTIFICATIONS

### COURSERA

#### STANFORD UNIVERSITY

Machine Learning

#### UNIVERSITY OF WASHINGTON

Machine Learning Foundations: A  
Case Study Approach

#### JOHNS HOPKINS UNIVERSITY

Data Science Specialization  
Executive Data Science

#### UNIV. OF CALIFORNIA, SAN DIEGO

Learning how to learn  
Introduction to Big Data  
Hadoop Platform and Application  
Framework

Introduction to Big Data Analytics

#### THE HONG KONG UNIVERSITY OF SCIENCE AND TECHNOLOGY

HTML, CSS and JavaScript  
Front-End UI Frameworks and Tools

### EDX

#### UNIV. OF CALIFORNIA, BERKELEY

Intro to Big Data with Apache Spark  
Scalable Machine Learning

## PROJECTS

South African crime data visualisation and  
analysis web app. [\[link\]](#)

Statistical Learning Theory: Notes and R  
programming examples. [\[link\]](#)

## EXPERIENCE

### DEEP LEARNING INDABAX WESTERN CAPE | ORGANISER

Jan 2018 – April 2018 | Activities:

- I helped to organise the Deep Learning IndabaX held at UCT. [\[link\]](#)

### PRAELEXIS | INTERN

Jan 2017 – Mar 2017 | Activities:

- My project involved developing an approach to learn profile attribute embeddings using neural networks. [\[link\]](#)

### DOMINO DATA LABS | FREELANCE WRITER

Jan 2015 – Dec 2016 | Posts:

- Reproducible research in computational sciences. [\[link\]](#)
- Predicting winners of the rugby world cup. [\[link\]](#)

### ZENAPTIX BIG DATA LAB | INTERN

Sep 2014 – Nov 2014 | Activities:

- I was part of a young team working on a project implementing scalable machine learning algorithms to classify auto-mobile driver behaviour.

## RESEARCH

### PUBLICATIONS

- Pretorius, Van Biljon, Kroon, Kamper. *Critical Initialisation and Deep Signal Propagation for Noisy Rectifier Neural Networks*. To appear in the 32nd Conference on Neural Information Processing Systems (NIPS), 2018.
- Pretorius, Kroon, Kamper. *Learning Dynamics of Linear Denoising Autoencoders*. In Proceedings of the 35th International Conference on Machine Learning (ICML), 2018. [\[link\]](#)
- Pretorius, Bierman, Steel. *A Meta-Analysis of Research in Random Forests for Classification*. In the Proceedings of the Annual Conference of the Pattern Recognition Association of South Africa (PRASA), 2016. [\[link\]](#)
- Pretorius, Bierman, Steel. *A Bias-Variance Analysis of Ensemble Learning for Classification*. In the Proceedings of the Annual Conference of the South African Statistical Association (SASA), 2016. [\[link\]](#)
- Pretorius, Parry. *Human Decision Making and Artificial Intelligence: A Comparison in the Domain of Sports Prediction*. In Proceedings of the Annual Conference of the South African Institute of Computer Scientists and Information Technologists (SAICSIT), 2016. [\[link\]](#)

### THESES

- Boosting: a statistical procedure for exploiting the wisdom of crowds.
- Advances in Random Forests with Application to Classification [\[link\]](#).

## AWARDS

- 2018 Google travel and conference grant for ICML.
- 2017 Centre for Artificial Intelligence Research (CAIR) PhD bursary.
- 2015 MIH (internet division of Naspers) media lab bursary.
- 2015 NRF masters innovation bursary.
- 2015 Stellenbosch Postgraduate merit bursary.
- 2014 Golden Key international honours society membership invitation.