

RELEVANT EXPERIENCE

OpenUp – Cape Town, South Africa (Freelance data scientist) 2019 -

- Develop deep learning networks and clustering algorithms to predict racial transformation in entrepreneurship in South Africa from text data
- Languages/ Technologies used: Keras, TensorFlow, NLTK, Python, AWS

Umuzi Academy– Johannesburg, South Africa (Data science manager, head of tech department) 2018 -

- Analytics
 - Designed and implemented psychological testing of internal applicants, created ETL pipeline, and obtained actionable insights from data. Decreased screening time by 80%
 - Surveyed and conducted focus groups for Uber to create a training course for drivers
 - Consulted on data ETL pipeline, analysis, and monitoring and evaluation strategy for Allan Gill Gray Philanthropy
- Teaching and curriculum development
 - Created data science curriculum, going from 0 to 17 students in a span of 8 months
 - Taught students Python, Machine Learning, and Statistical Analysis via lecture, one-on-one training, and self-published assignments
 - Held workshops on negotiation, public speaking and technical interviews, increasing student placement by 20%
- Management
 - Responsible for supervising management team of 7 web developers, data scientists and data engineers
 - Served as interim CTO, overseeing managers and initiating company partnerships
- Languages/ Technologies used: Python, R, MySQL, Linux, Docker, Airflow, Google Data Studio

Univ. of Cape Town – Cape Town, South Africa (Postdoctoral fellow) 2017 – 2018

- Researched genetic risk for developmental disorders in collaboration with Harvard, the Univ. of Cape Town and the Kenya Medical Research Institute (KEMRI)
- Analytics
 - Researched psychological test validity and reliability across language and cultural groups and created standardized language versions
 - Used general additive and hierarchical linear models to predict risk factors for poor fetal and infant growth outcomes
 - Conducted genomic quality control and genome wide association studies
- Management and community engagement
 - Conducted focus groups with community stakeholders
 - Supervised 6 students to completion
 - Chair, Student Training Committee, African Regional Int. Meeting for Autism Research 2018
- Languages/ Technologies used: R, Linux, MATLAB, BrainVision Analyzer, E-Prime

Univ. of Cape Town – Cape Town, South Africa (Contract lecturer) 2011 – 2018

- Lecturing
 - Taught multivariate statistics & machine learning (regression, classification, boosting, multilevel models, cross-validation), psychometrics, cognition and neuroscience
 - Created textbooks and education materials for Statistics for Evaluation & Research Methods, School of Management Studies, Faculty of Commerce
- Languages/ Technologies used: R, SPSS

Cape Town, South Africa (Statistical consultant) 2010 - 2018

- Conducted statistical analysis and consulting for research groups incl. the Institute for Mindfulness South Africa

LANGUAGES

English (Native), Afrikaans (Native), German (Elementary), Dutch (Reading Proficiency)

AWARDS

- Emerging Researcher Award, South African Association of Child and Adolescent Psychiatry and Allied Professions and International Meeting for Autism Research 2017
- Stevens-Shapiro Award, International Association for the Scientific Study of Intellectual and Developmental Disabilities 2016

EDUCATION

Fellow, Harvard T.H. Chan School of Public Health & Broad Inst. of Harvard and MIT	2017 - 2019
PhD Psychology, Univ. of Cape Town	2017
MA Psychological Research (Neuropsychology) <i>Cum Laude</i> , Univ. of Cape Town	2011
BSocSc (Hons) Psychology <i>Cum Laude</i> , Univ. of Cape Town	2008
BSc Human Life Sciences <i>Cum Laude</i> , Stellenbosch Univ.	2007

RESEARCH

- Characterizing genetic influences on neuro-developmental disorders in African populations
- Psychobiological correlates of empathy in autism
 - Longitudinal and time series data, multilevel modelling, data reduction, structural equation modelling, reproducible research, measurement of physiological signals
- Prediction of risk factors for poor fetal and infant growth outcomes
 - Longitudinal and time series data, multiple imputation of multilevel data, additive modelling

SELECTED PUBLICATIONS AND CONFERENCE ACTIVITY

Publications (out of 16, with 160 citations)

- **Hoogenhout, M.***, de Menil, V.*, Kipkemoi, P.*, ... Newton, C.R., Donald, K.A., & Robinson, E. (2019). The NeuroDev study: Phenotypic and genetic characterization of neurodevelopmental disorders in Kenya and South Africa. *Neuron*, 101, 15 – 19.
- **Hoogenhout, M.** (2018). Displaying data. In C. Tredoux & K. Durrheim (Eds.), *Numbers, Hypotheses and Conclusions: A Course in Statistics for the Social Sciences (3rd ed.)*. Cape Town: UCT Press.
- Tredoux, C. & **Hoogenhout, M.** (2018). Repeated measures analysis of variance. In C. Tredoux & K. Durrheim (Eds.), *Numbers, Hypotheses and Conclusions: A Course in Statistics for the Social Sciences (3rd ed.)*. Cape Town: UCT Press.
- Donald, K. A., **Hoogenhout, M.**, Du Plooy, C.P., Wedderburn, C.J., Nhapi, R.T., Barnett, W., Hoffman, N., Malcolm-Smith, S., Zar, H.J., & Stein, D.J. (2018). Cohort profile: The Drakenstein Child Health Study (DCHS). *BMJ Paediatrics Open*, 2, e000282. doi:10.1136/bmjpo-2018-000282
- **Hoogenhout, M.**, & Malcolm-Smith, S. (2014). Theory of mind predicts severity level in autism. *Autism*, 21, 242-252, doi: 10.1177/1362361316636758

Symposia Organised

- Kaku, S. M., & **Hoogenhout, M.*** (Chairs). *Strategies for management of children with mental health disorders in low and middle-income countries*. International Association of Child and Adolescent Psychiatry and Allied Professions (Aug 2018), Prague, Czech Republic.
- **Hoogenhout, M.*** & K. Donald. (Chairs). *The presentation and management of ASD in South Africa: Implications for multicultural and low-income settings*. African Regional International Meeting for Autism Research (Aug 2017), Stellenbosch, South Africa.

Conferences & Invited Talks (out of 29)

- **Hoogenhout, M.***. *Growing young talent: Selecting and training the next generation of data scientists*. Deep Learning IndabaX (April 2019), Durban, South Africa.
- **Hoogenhout, M.***. *Services for the poor need not be poor services: Child mental health interventions in low and middle-income countries*. International Association of Child and Adolescent Psychiatry and Allied Professions (Aug 2018), Prague, Czech Republic.
- Donald, K. A., **Hoogenhout, M.***, Du Plooy, C.P., Wedderburn, C.J., Nhapi, R.T., Barnett, W., Hoffinan, N., Malcolm-Smith, S., Zar, H.J., & Stein, D.J. *Investigating determinants of early child development and cognition in the Drakenstein Child Health Study*. International Association of Child and Adolescent Psychiatry and Allied Professions (Aug 2018), Prague, Czech Republic.
- **Hoogenhout, M.** *The physiology of empathy in autism*. Yale Child Study Center (July 2017), New Haven, USA.