

Curriculum Vitae

ANDRIES MICHEL HEYNS

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PERSONAL INFORMATION

Nationality: South African

Date of Birth: 23 March 1982

Languages: Fluent in **Afrikaans** and **English**. Advanced **French** competency.

PERSONAL PROFILE

A dynamic and motivated individual, pursuing diverse career paths and experiences. This is evident from my past and current endeavours in academics, sports, cultures, careers and languages. I am passionate about humanitarian field work and volunteer fire fighting.

Currently I'm a postdoctoral fellow at the Laboratory for Location Science at the Department of Geography, University of Alabama. My research focus is on geospatial analysis and optimisation for the purposes of multi-objective facility location – built upon an academic and professional foundation of radar engineering, applied mathematics for military threat evaluation, and geographical and spatial analysis. My research interests are profoundly inspired by my experiences as a field Worker for Doctors Without Borders and as a volunteer fire fighter in Cape Town, South Africa. I pursue the application of theory to real-world problems so that my research is not for academic purposes only.

I value my friendships and acquaintances highly and love meeting new people to learn from their experiences and simply to have interesting conversation. I am well-spoken and have won awards for presentations on my masters and doctoral studies.

EDUCATION

Jan'12 – Jan'16	PhD (Operations Research) , Stellenbosch University, - <i>A Multi-objective Approach Towards Geospatial Facility Location</i> French 318 - Distinction French 278 - Distinction
Feb'06 – Feb'08	MSc (Applied Mathematics) - Cum Laude , Stellenbosch University - <i>Measuring the Threat Value of Fixed Wing Aircraft in a Ground Based Air Defence Environment</i> French 178 – Distinction
Feb'01 – Dec'05 2000	BEng (Electric, Electronic and Computer Science) , Stellenbosch University High School Certificate - A aggregate (88%) , Zwaanswyk High School, Tokai

EDUCATION (ADDITIONAL)

April'17	Mobile data collection (KoboCollect, GeoODK, OsmAnd) Doctors Without Borders, Kampala, Uganda
Jun'12 – Jul'12	International Summer School , Chinese University of Hong Kong, Engineering and Technology Management Mandarin – introductory short course

PUBLICATIONS

- Heyns A.M., du Plessis W.P., Kosch M. & Hough G. 2019. Optimisation of tower site locations for camera-based wildfire detection systems, *International Journal of Wildland Fire*, In press.
- Heyns A.M. & van Vuuren J.H. 2017. Multi-type, multi-zone facility location, *Geographical Analysis*, 50(1), pp. 3-31.
- Heyns A.M. & van Vuuren J.H. 2016. A multi-resolution approach towards point-based multi-objective geospatial facility location, *Computers, Environment and Urban Systems*, 57, pp. 80-92.

Heyns A.M. & van Vuuren J.H. 2015. An evaluation of the effectiveness of observation camera placement within the MeerKAT radio telescope project, *South African Journal of Industrial Engineering*, 26(2), pp. 10-25.

Heyns A.M. & van Vuuren J.H. 2013. Terrain visibility-dependent facility location through fast dynamic step-distance viewshed estimation within a raster environment, *Proceedings of the 42nd Annual Conference of the Operations Research Society of South Africa*, pp. 112-121.

WORK EXPERIENCE

Mar'19 – Current	Short-term consultant World Bank, Nepal, Service delivery and infrastructure optimisation project
Sep'18 – Current	Postdoctoral research associate Laboratory for Location Science, Department of Geography, University of Alabama, Tuscaloosa, USA
Jan'17 – Aug'18	Postdoctoral fellow Department of Electrical, Electronic and Computer Engineering, University of Pretoria, South Africa
Nov'17 – Jan'18	GIS specialist – Rohingya emergency response Médecins Sans Frontières (MSF), Cox's Bazar, Bangladesh
Apr'17 – May'17	Cholera response logistics manager Médecins Sans Frontières (MSF), Namialo, Mozambique
Jul'16 – Dec'17	Hospital logistics manager Médecins Sans Frontières (MSF), Bangui, Central African Republic
Dec'12, Jun'13	Part-time Programmer Reutech Radar Systems, Stellenbosch <i>Development of line-of-sight computation software in Visual Studio</i>
Feb'12 – Jun'12	Student Assistant for Operations Research 314 Department of Logistics, Stellenbosch University
Oct'10 – Dec'11	Public School and Private English Teacher/Assistant French Ministry of Education, Reunion Island English Workshop, Reunion Island
Mar'09 – Oct'10	Kindergarten, Elementary, Middle and High School English Assistant Jeju Provincial Office of Education, Jeju Island, South Korea
Feb'08 – Mar'09	Software Engineer – Movement and Surveying Radar Reutech Radar Systems, Stellenbosch <i>Digital engineering (FPGA, PLC)</i> <i>Programming in C/C++ and Matlab</i> <i>Mathematical modelling</i>
June 2007	Part-time Programmer Reutech Radar Systems, Stellenbosch <i>Modification of existing C-code to be applied to a defence system for specific analysis requirements</i>
Jan'07 – Feb'07	Part-time Research Reutech Radar Systems, Stellenbosch <i>Creation, implementation and analysis of test scenarios for a defence system</i>
Feb'06 – Jun'07	Student Assistant for Probability Theory and Statistics 114 Department of Mathematical Sciences, Stellenbosch University

RESEARCH FUNDING AWARDS

	Postdoctoral
2017-2018	South African National Research Foundation, Department of Science and Technology, Centre of Excellence in Mathematical and Statistical Sciences
2017	University of Pretoria, Postdoctoral Scholarship
	Doctoral
2013-2015	South African National Research Foundation, Department of Science and Technology Innovation Doctoral Scholarship

2012-2014	Departmental Bursary, Stellenbosch University
2013-2015	Doctoral Academic Merit Bursary, Stellenbosch University
	Masters
2006, 2007	Armaments Corporation of South Africa Masters Bursary
2006, 2007	Masters Academic Merit Bursary, Stellenbosch University

ACADEMIC AWARDS

2017	Tom Rozwadowski medal for the best written contribution to Operations Research by a member of the Operations Research Society of South Africa, for the paper titled <i>A multi-resolution approach towards point-based multi-objective geospatial facility location</i>
2015	Award for the best doctoral presentation at the annual congress of the Operations Research Society of South Africa
2012	French 278 Book Award for “excellent results obtained for the duration of the year”, Stellenbosch University
2007	Award for second best student presentation at the annual Ledger conference of the Armaments Corporation of South Africa
2000	Student of the Year Award (for all-round achievement in academics, leadership, sport and culture), Zwaanswyk High School, Tokai

OTHER INVOLVEMENTS

2016	<i>Anti-poaching and combat tracking certification</i> Tactrac, Touwsrivier
2015 – 2016	<i>Fire fighter</i> Volunteer Wildfire Services, Newlands, Cape Town
2015	<i>Snake handling certification</i> Cape Reptile Institute, Cape town
2015	<i>Volunteer</i> Fisantekraal Animal Welfare, Cape Town

REFERENCES

Prof J van Vuuren
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Stellenbosch University
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Postdoctoral research host
University of Pretoria
Tel: +27 12 420 2951 Email: wduplessis@ieee.org

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