

# ewald zietsman

Data Scientist

## experience

- January 2017 – **24.com** Cape Town  
Data Scientist
- Design and implementation of recommender systems for News24 Edge and other 24.com products.
  - Analysis of algorithms and implementations to optimise performance and cost tradeoffs.
  - Performing A/B tests to find optimal parameters.
  - Applying machine learning to business problems.
  - Data wrangling and analysis and provision of business reports.
- Apr 2016 – **Hози** Cape Town  
Nov 2016  
Senior Engineer
- Design, implementation and maintenance of Hози's content aggregation and publishing platforms.
  - Code review of other developers' code.
  - Maintenance of the codebase.
  - Mentoring of junior developers.
- 2014 – 2016 **Siyavula Education** Cape Town  
Senior Software Developer
- Design, implementation and maintenance of a complex suite of web-based, machine-learning driven, educational software.  
<http://www.everythingmaths.co.za>
  - Code review of other developers' code.
  - Maintenance of the codebase.
  - Mentoring of junior developers.
- 2011 – 2014 **Siyavula Education** Cape Town  
Technical Coordinator / Software Developer
- Development and maintenance of Python software for XML document validation and conversion to publishing formats including HTML5,  $\text{\LaTeX}$ , EPub 3.0 and Mobile Web.
  - Implementation and maintenance of  $\text{\LaTeX}$  style sheets for print book PDF generation.
  - Management of technical aspects of textbook translations including:
  - Maintenance of *Transifex* server.
  - XML conversion to and from translation formats.
  - Developing proof of concept models and testing of new tools and technologies for possible inclusion in current processes.

2008	<b>University of Cape Town</b> Lecturer	School of Geomatics
	<ul style="list-style-type: none"> <li>• Lectured spherical trigonometry and map projections as part of Geographical Informations Systems I (2nd year course).</li> <li>• Lectured part of the Basic Surveying I course (2nd year course).</li> </ul>	
2006 – 2010	<b>University of Cape Town</b> Course Tutor	Department of Astronomy
	Astronomy I, Astronomy II, Spectroscopy NASSP Honours Course.	
2001 – 2004	<b>James Mahon Landmeters</b> Student Land Surveyor	Pretoria
	Assisted with various types of survey projects including precise engineering surveys, sectional title surveys, boundary disputes, setting out of townships and parcels, topographical surveys. Also assisted with other cadastral type work such as subdivisions of farms and parcels, servitude surveys and beacon relocation surveys.	

## education

2009 – 2011 (Incomplete)	<b>D.Phil. in Astronomy</b> Thesis: A Study of Selected Magnetic Cataclysmic Variables Relevant skills:	University of South Africa
	<ul style="list-style-type: none"> <li>• Reduction and analysis of high time-resolution observations obtained using the Southern African Large Telescope (SALT).</li> <li>• Computationally intensive calculations (genetic algorithms, utilising neural networks) performed using ROCKS (<a href="http://www.rockclusters.org">www.rockclusters.org</a>) cluster computing environment.</li> <li>• Scientific observations using the High-speed polarimeter (HIPPO) on the SAAO 1.9m telescope in Sutherland.</li> <li>• Development of custom analysis and visualisation software using Python and related tools.</li> </ul>	
2006 – 2008	<b>M.Sc. in Astrophysics and Space Science</b> Coursework: Plasma Physics, Magnetohydrodynamics, Extragalactic Astronomy, Observational Cosmology and Cataclysmic Variables. Dissertation: High-speed Photometry and Spectroscopy of the Cataclysmic Variable EC2117-54: Exploring New Avenues With the Southern African Large Telescope.	University of Cape Town
2005	<b>B.Sc.(Hons) in Astrophysics and Space Science</b> Coursework: Electrodynamics, Quantum Mechanics, Stellar Atmospheres, Stellar Structure and Evolution, Computational Physics, General Relativity, Galaxies, Observational Techniques and Radio Astronomy.	University of Cape Town
2001 – 2004	<b>B.Sc. in Geomatics</b> Coursework: Surveying, Geographic Information Systems, Computer Science, Remote Sensing, Mathematics, Physics, Astronomy, Numerical Methods, Land Law, Engineering Surveying and Photogrammetry.	University of Cape Town

## skills

**Programming languages:** Python, Javascript, Fortran, C/C++,  $\LaTeX$ .

**Operating systems:** Linux (Ubuntu, Fedora Core, Mandriva), OSX.

**Applications:** Git, Github, Pyramid, Plone, Django, scipy, matplotlib, pyfits, numpy, vpython, cython, swig, f2py, pygame, parallepython, Subversion, Mercurial, IRAF,  $\LaTeX$ , Trello, Code Climate.

**Surveying instruments:** Digital and Opto-mechanical Theodolites, Static and Real Time Kinematic GPS systems, Precise Levels, Dumpy Levels.

**Astronomical observing:** 110 nights observing experience on SAAO 1.9m and SAAO 1.0m Telescopes using the SAAO High-speed Polarimeter, UCT CCD Photometer, SAAO CCD Photometer.

**Miscellaneous:** exceptional analytical and problem solving skills, technical software programming and design capabilities, object-oriented programming, strong verbal and written communication skills.

## interests

**Computing:** Data analysis and visualisation, parallel and distributed computing, game design and programming, high-performance GPU computing, artificial intelligence, genetic algorithms, optimisation, Monte-Carlo simulations, 3D graphics and animation, real-time electric guitar amplifier synthesis, robotics, typesetting, web annotation, the semantic web.

**Academic:** Astrophysics of variable stars, astronomical observing and data reduction and analysis techniques, open-source educational software, programming literacy.

**Personal:** Guitars, DIY effects pedals and valve amplifiers, gaming.