

Maria van der Walt | Curriculum Vitae

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Education

University of Missouri-St. Louis <i>Doctor of Philosophy (Applied Mathematics)</i> Title of thesis: "Wavelet analysis of non-stationary signals with applications" Thesis advisor: C.K. Chui	St. Louis, MO May 2015
Stellenbosch University <i>Master of Science (Mathematics), Cum Laude</i> Title of thesis: "Ternary interpolatory subdivision" Supervisor: J.M. de Villiers	Stellenbosch, South Africa December 2012
Stellenbosch University <i>Bachelor of Science (Honors) (Mathematics), Cum Laude</i>	Stellenbosch, South Africa December 2010
Stellenbosch University <i>Bachelor of Science (Mathematical Sciences), Cum Laude</i> Majors: Mathematics, Applied Mathematics	Stellenbosch, South Africa December 2009

Employment history

Vanderbilt University <i>Assistant professor</i> <ul style="list-style-type: none">○ Accelerated Single-Variable Calculus I, II○ Differential Equations and Linear Algebra○ Methods of Linear Algebra	Nashville, TN August 2015 – present
University of Missouri-St. Louis <i>Graduate teaching assistant / Instructor</i> Instructor of record: <ul style="list-style-type: none">○ Trigonometry○ Basic Probability and Statistics○ Intermediate Algebra○ Beginning Algebra	St. Louis, MO January 2013 – May 2015 Spring 2014, Fall 2014, Spring 2015 Spring 2014 Fall 2013 Fall 2013
Stellenbosch University <i>Temporary lecturer</i> <ul style="list-style-type: none">○ Calculus I	Stellenbosch, South Africa July 2012 – December 2012
Stellenbosch University <i>Tutorial coordinator</i> <ul style="list-style-type: none">○ Mathematics for the Biological Sciences	Stellenbosch, South Africa January 2012 – July 2012

Stellenbosch University*Teaching assistant***Stellenbosch, South Africa***January 2009 – July 2012*

○ Calculus I	2009,2011,2012
○ Mathematics for the Biological Sciences	2009,2010,2011,2012
○ Introductory Mathematics	2010
○ Introductory Differential and Integral Calculus	2010,2011
○ Further Differential and Integral Calculus	2010,2011
○ Differential Equations and Linear Algebra	2011,2012
○ Series, Partial Differential Equations and Fourier Transform	2010,2011
○ Linear Programming	2009
○ Nonlinear Optimization	2009

Awards**University of Missouri-St. Louis****St. Louis, MO**

Edward Z. Andalafte Memorial Scholarship 2015

Graduate School Doctoral Recruitment Fellowship 2013,2014

Stellenbosch University**Stellenbosch, South Africa**

Stellenbosch University medal for the best master's student in the Faculty of Science 2012

Harry Crossley bursary 2011,2012

Dean's medal for the best achieving honors student in the Faculty of Science 2010

Rector's award for excellent achievement (academic) for the best achieving honors student in the Faculty of Science 2010

Bursary from Elaine Forsyth Memorial Trust 2008,2009,2010

G.B.B. Rubbi book prize for best marks obtained in Mathematics 2007,2008,2009,2010

Merit bursary 2007,2008,2009,2010

Elise Visser bursary 2007,2008

Other**South Africa**6th highest final grade in the Western Cape province in the Senior Certificate Examinations 2006

Highest marks in the Western Cape province in Mathematics and Music in the Senior Certificate Examinations 2006

Research papers and publications

- C.V. Beccari, M. Neamtu and M.D. van der Walt, "On the approximation order of rational geometric splines", in preparation.
- M.D. van der Walt, "[Real-time, local spline interpolation schemes on bounded intervals](#)", Applied Mathematical Sciences, 10(5): 205–234, 2016.
- C.K. Chui, H.N. Mhaskar and M.D. van der Walt, "[Data-driven atomic decomposition of real-world signals](#)", International Journal on Geomathematics, 6(1):1–30, 2016.

- C.K. Chui and M.D. van der Walt, "Signal analysis via instantaneous frequency estimation of signal components", International Journal on Geomathematics, 6(1):1–42, 2015.

Conference, colloquium and seminar talks

- University of Alberta, Canada, Colloquium *Feb. 3, 2015*
"Signal analysis via instantaneous frequency estimation of signal components"
- Vanderbilt University, Computational Analysis Seminar *Nov. 12, 2014*
"Signal analysis via instantaneous frequency estimation of signal components"
- Saint Louis University, Analysis Seminar *Nov. 7, 2014*
"Signal analysis via instantaneous frequency estimation of signal components"
- 55th Annual SAMS Congress, Stellenbosch University, South Africa *Oct. 31, 2012*
"Ternary interpolatory subdivision"
- Stellenbosch University, South Africa, Postgraduate Seminar *May 11, 2012*
"Interpolatory ternary subdivision"

References

Prof. Mike Neamtu

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Prof. Haiyan Cai

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Prof. Charles K. Chui

PhD thesis advisor

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Prof. H.N. Mhaskar

Collaborator

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