

CURRICULUM VITAE

STEPHAN VISAGIE



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1 PERSONAL DETAILS

Full names Stephanus Esterhuyse Visagie
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Nationality South African
Birth 5 September 1972, Calvinia
ID number 7209055180087
Health Excellent
Marital status Married
Mother tongue Afrikaans (read, write, speak)
Other languages English (read, write, speak)
 Dutch (read)
Updated 4 March 2015

2 WORKING EXPERIENCE

since 01/2012 Associate Professor (Operations Research), Head of Operations Research and Quantitative Management, Department of Logistics, University of Stellenbosch
2010–2011 Part time Lecturer at Högskolan i Borås, Borås, Sweden
04/2007–12/2011 Associate Professor (Operations Research), Department of Logistics, University of Stellenbosch
01/2003–04/2007 Senior Lecturer (Operations Research), Department of Logistics, University of Stellenbosch
01/1998–12/2002 Lecturer (Logistics), Department of Transport Economics and Logistics, University of Stellenbosch

3 EDUCATION

2004–2006 PhD (Operations Research), University of Stellenbosch
 Completed part time, while working
 Dissertation title: *English translation*: Algorithms for the maximisation of convex and related knapsack problems (Afrikaans: Algoritmes vir die maksimering van konvekse en verwante knapsakprobleme)
 Promotor: Prof HC de Kock
1999–2002 MPhil (Transport and logistic studies), University of Stellenbosch
 Completed part time, while working
 Thesis title: *English translation*: Discount on inventory with a decreasing demand (Afrikaans: Prysverlaging op voorraad met 'n dalende vraag)
 Study leader: Prof HC de Kock
1996–1997 MSc(Applied Mathematics), University of Stellenbosch
 Thesis title: *English translation*: Rotary crop systems in small grain areas (Afrikaans: Witselboustelsels in kleingraangebiede)
 Study leader: Dr HC de Kock
1992–1995 BSc(Physics) University of Stellenbosch
 Major subjects: Physics and Applied Mathematics
1991 Military service (Rank: Lieutenant)

1986–1990 High School Calvinia (Subjects: Afrikaans, English, Biology, Mathematics, Natural Sciences, Woodwork)

4 TEACHING RESPONSIBILITIES

4.1 UNDERGRADUATE

4.1.1 Högskolan i Borås, Sweden

2010–2011 Operations Research I (Part of the degree International Business Engineering)

4.1.2 University of Stellenbosch, South Africa

2015 Operations Research 244 (Linear programming)
2014 Operations Research 244 (Linear programming)
Quantitative Management 318 (Mathematical programming)
2011 – 2013 Operations Research 244 (Linear programming)
Operations Research 344 (Nonlinear programming)
Quantitative Management 318 (Mathematical programming)
2009 – 2010 Operations Research 244 (Linear programming)
Operations Research 344 (Nonlinear programming)
L^AT_EX for beginners
2008 Operations Research 244 (Linear programming)
L^AT_EX for beginners
2007 Operations Research 214 (Linear programming)
Operations Research 324 (Forecasting)
Quantitative Management 244 (Introduction to linear programming)
L^AT_EX for beginners
2006 Operations Research 214 (Linear programming)
Operations Research 244 (Network optimisation)
L^AT_EX for beginners

4.2 POSTGRADUATE

2008 – 2015 Advanced linear programming
Metaheuristics
L^AT_EX for beginners
2007 Game Theory
Metaheuristics
Optimisation (Queuing theory, Markov analysis)
2006 Game theory
2005 Game theory
Introduction to optimisation
2004 Game theory

4.3 ACHIEVEMENTS

2001 Rector's award for teaching excellence

5 POSTGRADUTE PROJECTS SUPERVISED

5.1 DELIVERED HONOURS PROJECTS

2014 Baard P and Taljaard M, A simulation of high lift movements in storage rack (Operations research)
2014 Zhang, Y, Concave knapsack problems (Operations research)
2013 Bester S, Voorraadbeplanning van nuwe winkels (Operations research)

- 2013 Engelbrecht D, Super 15 scheduling (Operations research)
- 2013 Thom E, Aanpassing van grootte-mengsels tydens voorraadtoewysing in 'n kettingwinkel (Operations research)
- 2012 Erasmus A, University Course Timetabling (Operations research)
- 2012 Hagspihl R, The number of pickers and SKU arrangement on a unidirectional picking line (Operations research)
- 2012 Louw M, Open pit limit problem (Operations research)
- 2012 Wolff M, Quality control on picking errors (Operations research)
- 2011 Matthee N, Bin size allocation on a picking line (Operations research)
- 2011 Swarts S, Solving a conveyor belt bottle neck in a distribution centre (Operations research)
- 2010 Samuels J, Space allocation on a permanent picking line with flow racks (Operations research)
- 2009 De Villiers AP, Comparisons between largest remainder methods in voting systems (Operations research)
- 2009 Matthews J, Single fixed crane optimisation within a distribution centre (Operations research)
- 2009 Scott M, Optimisation of a single-aisle picking line (Operations research)
- 2008 Fivaz D, Die invloed van wisselkoerse op 'n landbou-eenheid (Operations research)
- 2007 Bauman K, Location of fuels stations in Cape Town (Operations research)
- 2007 Cawood J, Plasing van vulstasies (Operations research)
- 2007 Du Plessis A, Cellular phone tracking (Operations research)
- 2007 Foster E, Optimal location for a self-storage facility in the greater Cape Town district (Operations research)
- 2007 Marais N, Scheduling of jobs on single stage, parallel machines with setup times (Operations research)
- 2007 Schoombe CB, Bepaling van 'n selfoongebruiker se beweegarea (Operations research)
- 2007 Mitchell F, Plasing van 'n kernkragentrale (Operations research)
- 2007 Venter L, Optimale toewysing van werkers aan take op 'n monterbaan (Operations research)
- 2006 Lombaard D, Invloed van die Wisselkoers op 'n boerderyeenheid (Operations research)
- 2006 Campbell C, An alternative method in setting of revised targets in ODI's (Operations research)
- 2005 Brink MM, Maatstawwe om verksillende roetebepalingsheuristieke te vergelyk (Logistics management)
- 2005 Douman LJ, Swaarvoertuig-oorbelading in Suid-Afrika (Logistics management)
- 2005 Du Toit A, Toewysing van hulpbronne vir gesondheidsorg in Suid-Afrika (Operations research)
- 2005 Van Schalkwyk S, Clarke-Wright algoritme met tydgleuwe (Operations research)
- 2003 Goedhals L, Inventory optimisation (Logistics management)
- 2003 Nel H, Literature review of inventory management (Operations research)
- 2002 Rheeder J, Optimale kratdiepte vir terugbesorgbare kratte (Logistics management)
- 2001 Swart L, Die Box-Jenkins vooruitskattingsmetode (Logistics management)
- 2000 Labuschagne A, Meyer Pauline, Toedeling van voorraad en bedryfskoste in 'n CD-winkel (Logistics management)
- 2000 Scheepers PT, The analysis of inventory control as used by Music Matrix (Logistics management)

5.2 DELIVERED MASTERS THESES

- 2012 Fivaz D, Duplication of SKUs on parallel picking lines
- 2011 De Villiers AP, Minimising the total travel distance to pick orders on a unidirectional picking line
- 2011 Matthews J, Order sequencing and SKU arrangement on a unidirectional picking line
- 2011 Kruger M, Meta-heuristic approaches to generate quantum algorithms
- 2010 Neveling A, Ultimate pit limit problem
- 2010 Smuts F, Measurement of the process efficiency in the prepaid mobile phone industry
- 2009 Venter L, A meta-heuristic approach to fuel blending
- 2006 Youell A, Maximisation of resource allocation problems with S -curves in the objective function

- 2005 Van Eck L, Fairness of seat allocation methods in proportional representation
- 2005 Seugmuller D, Selection and scheduling of jobs with time-dependent duration
- 2003 Ghebradsadik AH, Optimising an integrated crop-livestock farm
- 2001 Jacobs NJ, Besluitneming met die distribusie van koring in Suid-Afrika
- 1999 Loubser JS, Logistieke beplanning met behulp van objek-georiënteerde simulاسie

5.3 CURRENT MASTERS THESES

- 2012 – Swarts S, Long term planning of the South African road network design.
- 2013 – Erasmus A, On the size-mix and size-profile problem
- 2014 – Thom E, The size-mix problem *Title to be finalized*
- 2015 – Baard P, Crane scheduling in storage racks *Title to be finalized*
- 2015 – Dikgale P, *Title to be finalized*

5.4 CURRENT PHD DISSERTATIONS

- 2012 – Matthews J, Multiple order sequencing on a unidirectional picking line
- 2012 – Zeratsion TW, Inventory routing problem
- 2008 – Van Eck L, Heuristieke vir die maksimering van knapsakprobleme met skeibare stygende nie-lineêre funksies in die doelfunksie. (Part time)
- 2008 – Wolmarans A, A layered travelling salesman and vehicle routing problem (Part time)

6 RESEARCH ACTIVITIES

6.1 PEER REVIEWED JOURNAL ARTICLES (IN PRINT)

- 2015 Burger AP, Jacobs CG, Van Vuuren JH, Visagie SE, Scheduling multi-colour print jobs with sequence-dependent setup times, *Journal of Scheduling*, **18(2)**, pp 131–145. DOI: 10.1007/s10951-014-0400-2
- 2015 Matthews J, Visagie SE, SKU assignment to parallel unidirectional picking lines, ACCEPTED: TO APPEAR IN *South African Journal of Industrial Engineering (SAJIE)*
- 2015 Venter L, Visagie SE, A comparison of classical metaheuristics for petrochemical blending problems, ACCEPTED: TO APPEAR IN *ORiON*, **31(2)**.
- 2014 Thom E, Visagie SE, Matthews J, Aanpassing van grootte-mengsels tydens voorraadtoewysing in 'n kettingwinkel, *LitNet Akademies*, **11(3)**, pp. 1–25.
- 2014 Hagspihl R, Visagie SE, The number of pickers and SKU arrangement on a unidirectional picking line, *South African Journal of Industrial Engineering (SAJIE)*, **25(3)**, pp. 169–183.
- 2013 Matthews J, Visagie SE, Order sequencing on a unidirectional cyclical picking, *European Journal of Operational Research*, **231(1)**, pp. 79–87.
- 2013 De Villiers AP, Matthews J, Visagie SE, Metaheuristic approaches to order sequencing on a unidirectional picking line, *ORiON*, **29(1)**, pp. 31–54.
- 2012 De Villiers AP, Matthews J, Visagie SE, Tour Construction Heuristics for an Order Sequencing Problem. *South African Journal of Industrial Engineering (SAJIE)*, **23(2)** pp. 56–67.
- 2012 De Villiers AP, Visagie SE, Toewysingsheuristieke om die volgorde van bestellings vir 'n uitsoeklyn te bepaal, *Litnet Akademies*, **9(1)**, pp. 1–22.
- 2011 Matthews J, Visagie SE, Single fixed crane optimisation within a distribution centre, *South African Journal of Industrial Engineering (SAJIE)*, **22(2)**, pp. 107–120.
- 2009 Venter L, Visagie SE, Optimale toewysing en skedulering van werkers en take op 'n monteerbaan, *Die Suid-Afrikaanse Tydskrif vir Natuurwetenskap en Tegnologie*, **28(1)**, pp. 64–83.
- 2008 Visagie SE, On the efficient solvability of a simple class of nonlinear knapsack problems, *ORiON*, **24(1)**, pp. 1–15.
- 2007 Seugmuller DM, Visagie SE, De Kock HC, Pienaar WJ, Selection and scheduling of jobs with time-dependent duration, *ORiON*, **23(1)**, pp. 17–28.
- 2005 Van Eck L, Visagie SE, De Kock HC, Fairness of seat allocation methods in proportional representation, *ORiON*, **21(2)**, pp. 93–110.

- 2005 Visagie SE, Ghebretsadik AH, Modelling risk in farm planning, *AGREKON*, **44(4)**, pp. 561–585.
- 2004 Visagie SE, Optimering van wisselboustelsels/The optimisation of rotary crop systems, *AGREKON*, **43(3)**, pp. 297–316.
- 2004 Visagie SE, Prysverlaging op voorraad met 'n dalende vraag, *ORiON*, **20(2)**, pp. 125–142.
- 2004 Visagie SE, De Kock HC, Ghebretsadik AH, Optimising an integrated crop-livestock farm using risk programming, *ORiON*, **20(1)**, pp. 29–54.
- 2002 Loubser JS, Visagie SE, Pienaar WJ, Logistieke beplanning met behulp van simulatie: 'n Gevallestudie, *ORiON*, **18(1)**, pp. 1–19.
- 2000 Pienaar WJ, Visagie SE, Guidelines for the economic choice of transport infrastructure, *Administratica Publica*, **10(1)**, pp. 91–107.
- 1998 Visagie SE, De Kock HC, Wisselboustelsels in die Swartland, *ORiON*, **14(1)**, pp. 37–56.

6.2 PEER REVIEWED JOURNAL ARTICLES (SUBMITTED)

- 2015 Matthews J, Visagie SE, SKU assignment using correlations on unidirectional picking lines [submitted to: ORiON]
- 2014 Van Eck L, Visagie SE, On exact solution approaches for the concave knapsack problem, [submitted to: Journal of Global Optimization]
- 2014 Matthews J, Visagie SE, SKU assignment on a unidirectional picking line, [submitted to: EJORS]

6.3 WORKING PAPERS (TO BE SUBMITTED)

- 2015 Visagie SE, Algoritmes vir konkawe knapsack probleme oor vaste intervalle
- 2015 Matthews J, Visagie SE, SKU assignment using segmentation and capacity constraints
- 2015 Van Eck L, Visagie SE, Greedy heuristics for the concave knapsack problem

6.4 POPULAR PUBLICATIONS

- 2011 Matthews J, Visagie SE, Crane optimisation within a distribution centre, Newsletter of the operations research society of South Africa
- 2004 Visagie SE, Operasionele Navorsing in die Landbou, Newsletter of the operations research society of South Africa.

6.5 INVITED TALKS

- 2014 Dynamic sequencing of orders on a picking line, University of Limpopo, South Africa
- 2011 Order sequencing on a unidirectional picking line: A case study, Faculty of Economic and Management Sciences, University of Stellenbosch
- 2011 Order sequencing on a directed picking line, Department of Industrial Engineering, University of Bologna, Italy
- 2007 Maximisation of the concave knapsack problem, Department of Decision Sciences, University of South Africa
- 2004 Modelling risk in farm planning, Department of Statistics, University of Stellenbosch

6.6 PAPERS PRESENTED AT INTERNATIONAL CONFERENCES AND WORKSHOPS

- 2014 Visagie SE, Matthews J, SKU assignment in a zoned order picking system with unidirectional picking lines, IFORS, Barcelona, Spain
- 2014 Thom EW, Visagie SE, Adjusting the size-mix during allocation, IFORS, Barcelona, Spain
- 2012 Burger AP, Jacobs CG, Van Vuuren JH, Visagie SE, Minimizing setup time in colour printing schedules, EURO, Vilnius, Lithuania
- 2012 Matthews J, Visagie SE, On the optimization of a unidirectional picking line in a DC, EURO, Vilnius, Lithuania

- 2011 De Villiers AP, Matthews J, Visagie SE, Scheduling of orders on a variant of a unidirectional carousel system, IFORS, Melbourne, Australia
- 2011 Matthews J, Visagie SE, Minimizing the cycles traversed on a unidirectional cyclical picking line, IFORS, Melbourne, Australia
- 2008 Venter L, Visagie SE, Assignment of cross-trained workers to tasks on a production line, IFORS, Sandton.
- 2008 Visagie SE, Branch-and-Bound solution techniques for a special class of nonlinear knapsack problems, IFORS, Sandton.
- 2002 Pienaar WJ, Visagie SE, Operations Research, the toolkit of the logistician, International workshop on OR in Logistics, Pretoria
- 2002 Visagie SE, Optimal distribution of Wheat in South Africa, International workshop on OR in Logistics, Pretoria
- 1997 Visage SE, De Kock HC, Optimal strategies for rotary crop systems, Southern Africa OR conference, Mbabane, Swaziland

6.7 PAPERS PRESENTED AT NATIONAL CONFERENCES (SINCE 2006)

- 2014 Erasmus A, Visagie SE, The size-mix problem for seasonal products: stability of profiles and performance measures
- 2014 Thom EW, Visagie SE, Adjusting the size-mix of products during allocation
- 2013 Erasmus A, Visagie SE, Matthews J, The size-mix problem for seasonal products
- 2013 Thom EW, Visagie SE, Matthews J, Adjusting the six-mix of products
- 2013 Visagie SE, Bester S, Matthews J, Assortment planning for new stores
- 2013 Matthews J, Visagie SE, On storage assignment in a zoned order picking system with unidirectional picking lines
- 2013 Hagshil R, Visagie SE, The number of pickers and SKU arrangement on a unidirectional picking line
- 2013 Engelbrecht D, Visagie SE, Matthews J, On the fairness of a Super 15 schedule
- 2011 De Villiers AP, Metaheuristic approaches for order sequencing in a directed picking line
- 2010 De Villiers AP, Visagie SE, Directed cyclical picking line optimization – Part I: Industry background and introduction
- 2010 Matthews J, Visagie SE, Directed cyclical picking line optimization – Part II: Algorithms, preliminary results and future work
- 2009 De Villiers AP, Visagie SE, Nieuwoudt I, Comparisons between largest remainder methods in voting systems, Annual ORSSA conference, Stellenbosch
- 2009 Kruger MG, Geyer HB, Visagie SE, Adding to the security of the classic bit commitment protocol, by requiring its complement as an added qbit of information, Annual SAIP conference, Durban
- 2009 Matthews J, Visagie SE, Single crane optimisation within a distribution centre, Annual ORSSA conference, Stellenbosch
- 2009 Scott M, Visagie SE, The optimisation of a single-aisle picking line, Annual ORSSA conference, Stellenbosch
- 2009 Smuts F, Visagie SE, Nieuwoudt I, The management of deferred revenue in the prepaid value channel of emerging market mobile phone networks, Annual ORSSA conference, Stellenbosch
- 2009 Van Eck L, Visagie SE, Exact solution approaches to concave knapsack problems, Annual ORSSA conference, Stellenbosch
- 2009 Venter L, Visagie SE, Heuristic and metaheuristic approaches to blending problems, Annual ORSSA conference, Stellenbosch
- 2007 Cawood J, Visagie SE, Location of a fueling station, Annual ORSSA conference, Cape Town
- 2007 Marais N, Visagie SE, Production scheduling in a plastic printing company, Cape Town
- 2007 Mitchell F, Visagie SE, Location of a nuclear power plant, Cape Town
- 2007 Venter L, Visagie SE, Optimal allocation of workers to tasks on a production line, Cape Town
- 2006 Visagie SE, De Kock HC, Special case of a nonlinear knapsack problem: Theoretical results, Annual ORSSA conference, Pietermaritzburg

2006 De Kock HC, Visagie SE, Special case of a nonlinear knapsack problem: Branch-and-bound solution techniques, Annual ORSSA conference, Pietermaritzburg

6.8 ACHIEVEMENTS

2007 Young researcher with the second most publications in the Faculty of Economic and Management sciences at the University of Stellenbosch

2014 Received the Tom Rozwadowski medal – awarded by the Operations Research Society of South Africa for the best written research paper published by a member of the society in a scholarly journal.

7 OTHER SERVICES RENDERED

7.1 DEPARTMENTAL, FACULTY AND/OR UNIVERSITY COMMITTEES

2011 – Head of Operations Research, Department of Logistics

1999 – Executive committee of the lecturer's association

2004 – Program committee for BSc Mathematical sciences

2004 – Training forum of the University of Stellenbosch

2006 – Academic procession leader committee

2000 – 2006 Timetable committee for the Faculty of Economic and Management Sciences

7.2 NATIONAL COMMITTEES

2011 – Executive committee of the operations research society of South Africa as Editor-in-chief of ORiON

2011 National Editor's Forum of South Africa.

2004 – 2010 Executive committee of the operations research society of South Africa as business manager of ORiON

1999 – 2003 Executive committee of the operations research society of South Africa as additional member

1998 Executive committee of the operations research society of South Africa as treasurer

2007 – Secretary of the *Suid-Afrikaanse akademie vir wetenskap en kuns: Weskaapse werksgemeenskap*

7.3 MENTOR

2006 – 2007 Acted as mentor for a learner on the Plus program (Course offered by Intuition)

7.4 PROFESSIONAL SERVICES FREE OF CHARGE

2003 *Freshmark*: Determined optimal crate size to transport fresh produce.

2001 *Music matrix*: Developed a method to determine when to give discount on CD's in stock to optimize revenue.

7.5 CONSULTATION

2001 – *DevisaMelk*: I had a huge part in the development of software for dairy farmers to give them a tool to manage their farming activities. It includes features like keeping a database on all management data (for example health and production) to the optimal mix of feeds.

2002 – *Pioneer foods*: I have built and implemented a model to optimally buy, distribute and mill maize and wheat though out South Africa.

2008 *Sasol*: Presented a short course (over the span of one week) on mathematical programming.

8 REFERENCES

These persons are familiar with my professional qualifications and my character:

Prof Johann de Villiers (Past Dean)

Department of Business Management

University of Stellenbosch

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Prof Hannelie Nel (Head of Department)

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