

Ross Lagerwall

Technical Skills

I am fluent in C, C++, Python and Java. I have a good knowledge of PHP and JavaScript as well as experience with database programming and SQL.

Other experience includes using various markup languages (HTML, CSS, \LaTeX and reStructuredText) and version control systems (Git, Mercurial, Subversion, and Perforce).

Problem solving interests me as well as theoretical Computer Science and the practice of programming (especially languages, operating systems and network servers).

I use Linux extensively and am interested in Linux programming and open source software. I actively participate in the open source community.

Experience

2014– **Software Engineer**, *Citrix Systems*, Cambridge, United Kingdom.

Developed XenServer open source server virtualization software.

Roles included performance testing, analysis and improvements, scalability improvements, and upgrading the underlying distribution on which the appliance is built. Technologies used include C, Python, Git and Mercurial.

2012 **Junior Developer**, *ThoroughTec*, Durban, South Africa.

Developed mining and vehicle simulations in C++.

Projects included implementing vehicle logic, dragline dynamics, and user interface changes. Technologies used include Microsoft Visual C++, C# and Perforce.

2011 Contributed significantly to the Python programming language and became a Python core developer.

2010– **Software Developer**, *Numberwise*, Durban, South Africa.

Developed an interactive web-based maths program called Numberwise used by over 20 000 users in 30 different countries.

I developed a client program in Visual Basic which connects to a server written in PHP and MySQL.

2010 Wrote software for Professor R. Arnab from the University of Botswana to aid statistical research into populations and demographics.

2008–2009 Vacation work at Altech UEC for ten weeks. Projects included writing software to aid developers in bug reporting, developing software to perform automated hardware testing and writing software to remotely control a set top box.

Publications

2011 Lagerwall, R.D., Viriri, S. Plant Classification using Leaf Recognition. *Proceedings of the 22nd Annual Symposium of the Pattern Recognition Association of South Africa*, 22-25 November 2011, Johannesburg, South Africa. pp 91–95.

Scholarships

2012–2013 Wolfson Cambridge Scholarship

2012–2013 Cambridge Commonwealth Trust Scholarship

- 2012–2013 Skye Foundation Scholarship
 - 2011 Zac Yacoob Scholarship – awarded to the top honours student in the University.
 - 2011 NRF Innovations Scholarship
 - 2011 Postgraduate scholarship
- 2009–2010 Prestige Scholarship – awarded to the third-highest ranked undergraduate student in the University.
- 2008–2010 Entrant Merit Scholarship

Prizes and Awards

- 2011 Won 2CANA programming competition.
- 2011 Awarded a Certificate of Merit for coming first or second in all subjects in BSc Honours Computer Science.
- 2011 Member of the 1st ranked team for UKZN in the Standard Bank IT Challenge that competed in the national finals.
- 2008–2010 Received a Dean's Commendation for academic performance in each semester.
- 2008–2010 Awarded a Certificate of Merit for coming first or second in 23 out of 24 subjects in BSc Computer Science.
- 2009 Merit award for excellent achievement from the School of Information Systems & Technology.

Tertiary Education

- 2012–2013 **MPhil in Advanced Computer Science**, *University of Cambridge*, England.

Degree awarded with *Distinction*

Aggregate: 83.3%

Thesis title: *Memory-mapped Socket Buffers for Zero-copy Networking*

Courses completed:

- 97% Programming for Mobiles
- 100% Multicore Programming
- 86% Computer Security: Principles and Foundations
- 74.8% Data Centric Networking
- 78.3% Computer Security: Current Applications and Research
- 90.5% Research Skills
- 79% Project report

- 2011 **BSc Honours Computer Science**, *University of KwaZulu-Natal*, South Africa.

Degree awarded *Summa Cum Laude*

Aggregate: 93.5%

1st class pass for all subjects

Thesis title: *Plant Classification using Leaf Recognition*

Courses completed:

- | | |
|--------------------------------|--------------------------------------|
| 97% Neural Networks | 92% Ontologies and Knowledge Bases |
| 86% Advanced Operating Systems | 100% Cryptography & Network Security |
| 90% Optimization and Modelling | 90% Computer Graphics |

97% Honours Project

2008–2010 **BSc Computer Science**, *University of KwaZulu-Natal*, South Africa.

Degree awarded *Summa Cum Laude*

Aggregate: 95.5%

1st class pass for all subjects

Courses completed in third year:

99%	Comparative Programming Languages	95%	Software Design
96%	Operating Systems	95%	Artificial Intelligence
95%	Algorithms & Complexity Theory	99%	Translators, Compilers & Interpreters
87%	Database Systems	98%	Data Communications and Networks

Courses completed in second year:

92%	Object-Oriented Programming	97%	Data Structures
95%	Advanced Calculus & Linear Algebra	91%	Internet Technologies
95%	Discrete Mathematics with Applications	94%	Databases and Programming
97%	Probability Distributions	99%	Intro to Numerical Mathematics

Courses completed in first year:

96%	Computer Science Fundamentals	98%	Computer Programming
95%	Introduction to Calculus	89%	IS & T Development Fundamentals
93%	Mechanics, Optics and Thermal Physics	100%	Calculus and Linear Algebra
97%	Introduction to Statistics	99%	Statistical Methods

Secondary Education

Matriculated in 2007. All subjects were completed on higher grade.

98%	Physical Science	81%	Afrikaans 2 nd Language	88%	Technika Electronics
93%	Mathematics	95%	Computer Studies	69%	English 1 st Language

Extracurricular Activities

Tennis

2008, 2010 Represented UKZN A team at USSA inter-university tennis competition.

2005–2007 KZN tennis elite squad member.

1999–2007 Competed in South African Junior Nationals championships

Other Interests

My other interests include sport (especially tennis), photography, hiking, RC helicopter flying, and typography.