

## Luke Maurits

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CONTACT INFORMATION	Computational Cognitive Science Lab Department of Psychology University of California at Berkeley 3210 Tolman Hall Berkeley, CA 94720-1650 USA	<i>E-mail:</i> luke@maurits.id.au <i>WWW:</i> www.luke.maurits.id.au
CITIZENSHIP	Australian (birth), UK (descent), current passports held for both citizenships	
RESEARCH INTERESTS	<ul style="list-style-type: none"><li>• Computational and (Bayesian) statistical modelling of cognitive processes, especially language acquisition and processing.</li><li>• Dynamics of language and cultural change due to iterated learning.</li><li>• Interaction of language and thought.</li></ul>	
EDUCATION	<b>University of Adelaide</b> , Adelaide, South Australia  Ph.D., March 2012 <ul style="list-style-type: none"><li>• Discipline: Psychology</li><li>• Supervisors: Dr. Daniel Navarro, Dr. Amy Perfors</li><li>• Thesis title: Representation, information theory and basic word order</li></ul> B. Ma. & Comp. Sc. (Hons), December 2006 <ul style="list-style-type: none"><li>• Discipline: Pure Mathematics</li><li>• Supervisor: Dr. Robert Clarke</li><li>• Thesis title: <b>Public Key Cryptography Using Discrete Logarithms in Finite Fields</b></li><li>• Areas of study: algebraic topology, finite and projective geometry, Galois theory, information theory, Lie algebras, measure theory and integration, number theory</li></ul> B. Ma. & Comp. Sc., December 2005 <ul style="list-style-type: none"><li>• Majors: Applied Mathematics, Pure Mathematics</li><li>• Other areas of study: Statistics, Theoretical Physics</li></ul>	
AWARDS	<b>Golden Key International Honour Society</b> , <ul style="list-style-type: none"><li>• Accepted offer of membership after attaining first year undergraduate exam results in top 10% of country, 2003.</li></ul> <b>Australian Bureau of Statistics</b> , <ul style="list-style-type: none"><li>• Awarded one of two \$4000 scholarships in South Australia for second year undergraduate study of statistics, awarded on basis of performance in first year undergraduate study of statistics, 2004.</li></ul> <b>University of Adelaide</b> , <ul style="list-style-type: none"><li>• School of Psychology divisional PhD scholarship, 2008.</li></ul>	
ACADEMIC APPOINTMENTS	<b>Computational Cognitive Science Lab, University of California, Berkeley</b>  <i>Postdoctoral scholar</i> <b>September 2011 to present</b> <ul style="list-style-type: none"><li>• Collaboration with Tom Griffiths on projects related to mathematical modelling of iterated language learning and computational historical linguistic.</li></ul>	

## School of Psychology, University of Adelaide

*Tutor*

**March 2010 to July 2010**

- Planning and running of tutorials for the course Computational Cognitive Science III
- Marked of assignments for the course Computational Cognitive Science III

## School of Mathematical Sciences, University of Adelaide

*Casual Academic Staff Member*

**Intermittent, March 2006 to Present**

- Marking of assignments for the courses:
  - Mathematics I and IM
  - Differential Equations and Fourier Series II
  - Vector Analysis and Complex Analysis II
- Running of computer practical sessions for the course Mathematics I:
  - Demonstration of MATLAB programming techniques in front of classes of 2030 students
  - One-on-one assistance of first time MATLAB programmers

### JOURNAL PUBLICATIONS

A. Metcalfe, L. Maurits, T. Svenson, R. Thach, G. E. Hearn. Modal analysis of a small ship sea keeping trial. *ANZIAM Journal*, vol 47, pp. 915–933, 2005

### CONFERENCE PUBLICATIONS

Maurits, L., Griffiths, T. Connecting input filtering and selection in language evolution (Abstract). *Proceedings of the 34th Annual Conference of the Cognitive Science Society*, p. 2779, 2012.

Maurits, L., Perfors, A., Navarro, D. Why are some word orders more common than others? A uniform information density account. *Advances in Neural Information Processing Systems*, 23.

Maurits, L., Perfors, A., Navarro, D. Joint acquisition of word order and word reference. *Proceedings of the 31th Annual Conference of the Cognitive Science Society*, pp. 1728–1733, 2009.

### PROFESSIONAL EXPERIENCE

**m.Net Corporation**, Adelaide, SA Australia

*Research Analyst*

**June 2007 to May 2008**

- Investigated applicability of Latent Dirichlet Allocation models to collaborative filtering applications for mobile phone-distributed products and developed software implementations of same.
- Developed simple website clickstream analysis software.

*Mobile Applications Engineer*

**September 2007 to January 2008**

- Worked on Campaign Mobile web-based SMS marketing application. Key responsibilities were: web application security, spam detection and prevention, secure storage of credit card details, automated billing system including processing of credit card transactions. Core technologies used were: Java 5, Apache Tomcat, PostgreSQL, Hibernate ORM, Eclipse IDE, SVN revision control.

### TECHNICAL SKILLS

Extensive hardware and software experience in information technology

- Applications:  $\text{T}_{\text{E}}\text{X}$ ,  $\text{L}^{\text{A}}\text{T}_{\text{E}}\text{X}$ ,  $\text{BIBT}_{\text{E}}\text{X}$ , Microsoft Office, and other common productivity packages for Windows and POSIX platforms

- Programming languages: C, Java, MATLAB, PHP, Python, SQL
- Operating systems: Microsoft Windows, Linux (various distributions), NetBSD, OpenBSD
- Network administration: Experience administering web, mail and database servers in NetBSD environments, using Dovecot, Lighttpd, MySQL, Postfix, PostgreSQL, rsync, SSH

Light experience with electronics and embedded systems development

- Some experience with AVR microcontrollers, including use of PWM DACs
- Some experience with 4000 series digital logic
- Elementary analogue electronics, especially for audio applications