

Curriculum Vitae

Menaka Lashitha Bandara

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Education

2000 – 2004 Monash University (Clayton Campus) (www.monash.edu.au)

- ◆ Bachelor of Science (major in Pure Mathematics, minor in Astrophysics)
- ◆ Bachelor of Computer Science
- ◆ Deans List Fellow in Science (average marks greater than 85 across subjects) from 2001 – 2003
- ◆ Achieved two perfect scores (100) for Data Structures and Algorithms (2nd year subject, 2002), and for the final year project

1994 – 1999 Mt. Waverley Secondary College (Mt. Waverley, Victoria, Australia)

- ◆ Graduated with 97.5 Tertiary Entrance Rank (out of 99.95)
- ◆ Awarded for General Academic Excellence in 1996, 1997
- ◆ Awarded Academic Excellence in Mathematical Methods in 1998
- ◆ Awarded Academic Excellence in Chemistry in 1999

Academic Achievements

- ◆ *Implementation of a clustering algorithm to classify web usage (2003)*

(www.lashi.org/academic/em)

Grant given by the School of Computer Science and Software Engineering to write an implementation of the Expectation Maximisation algorithm in C# using the .NET architecture. The software was generalised beyond simple web usage classification to a class of problems where data paths can be represented by a sequence of Unicode characters. Both the Mono environment (www.mono-project.com) and Visual Studio .NET was used in order to ensure compatibility under Unix and Windows. Supervisor: Dr. David Albrecht (www.csse.monash.edu.au/~dwa).

- ◆ *Graph Colouring with Small Monochromatic Components (2004)*

(www.lashi.org/academic/graph_colour)

Implemented some efficient algorithms for a discrete optimisation problem (in graph colouring) in C. Primarily platform was Linux. A software library toolkit was written to efficiently handle graphs of the type concerned and measure the effectiveness of the algorithms using a well defined metric. The code was abstracted and modularised in order to easily extend or write new algorithms for testing. Extensions were made to a pre-existing algorithm. These extensions are conjectured to give a polynomial time algorithm for an otherwise unknown complexity. Supervisor: Associate Professor Graham Farr (www.csse.monash.edu.au/~gfarr).

- ◆ *Genetic Algorithm for curve detection (2004)*

(www.lashi.org/academic/ga)

Designed and implemented an effective GA schema initially for solving the *Brachistochrone* Problem (detecting a curve which gives minimal transit time for a ball rolling on it). This software was generalised so it can be driven by any objective function which can be maximised – where the purpose is to detect the shape of some curve. The software is written in C, primarily for the Linux platform. Supervisor: Dr Bernd Meyer (www.csse.monash.edu.au/~berndm).

Academic Interests

- ◆ Graph theory (in particular graph colouring), Number theory and Algebra, Mathematical Analysis (in particular Functional Analysis), Differential Geometry
- ◆ Stochastic Optimisation (in particular genetic algorithms)
- ◆ Languages, Compilers
- ◆ Computability (in particular lambda calculus)
- ◆ Complexity theory

Personal Interests

- ◆ Astronomy
- ◆ Cars and mechanics
- ◆ Socialising
- ◆ Travelling
- ◆ Reading
- ◆ Theatre

Technical Skills

- ◆ *Languages* – C, C++, C#, Java, ML, Haskell, PERL, Python, Lisp, Unix Shell programming, Lex/Flex, Bison/Yacc, LaTeX typesetting environment. A new language can be learned typically under 3 days.
- ◆ *Operating Systems* – Linux, OpenBSD, FreeBSD, NetBSD, Windows.
- ◆ *Networking* – Network Information System (YP Services), Network File System, SMB file system (Samba, Windows – Unix connectivity), Network Address Translation and IP Masquerading, Domain Name Serving.
- ◆ Typing speed of approximately 80 – 90 words per minute.
- ◆ Familiar with MS Office and OpenOffice.Org packages.

Personal Skills

- ◆ Good communication skills.
- ◆ Highly motivated, enjoy challenges and overcoming them.
- ◆ Trustworthy, Punctual, Reliable, Focused.

Volunteer Experience

- ◆ *Monash University (Clayton, Victoria, Australia) (Currently)*
Reimplementation of the Monash Image Library – a teaching tool for image processing students.
- ◆ *University of Colombo (Polgolla, Sri Lanka) (2004)*
Conducted lecture on Open Source software, Linux, and Unix operating systems.
- ◆ *Monash University Computer Science Club GDB Tutor (Clayton, Victoria, Australia) (2002)*
Wrote “A guide to GDB” (www.lashi.org/writing/guide_to_gdb_1.1.pdf)- a tutorial for the GNU DeBugger, and conducted tutorials at the university.
- ◆ *Monash University Computer Science Club Linux Installer (Clayton, Victoria, Australia) (2001 – 2003)*
Worked as a Linux installer on mass install days organised by the club.
- ◆ *National Institute of Information Technology (Kandy, Sri Lanka) (2000)*
Conducted seminar on the Linux operating system.
- ◆ *Advanced Technical Institute (Kandy, Sri Lanka) (2000)*
Lectured an introduction to the C programming language, and set up Linux server (including NIS, NFS, Samba, DNS, Printing) to connect dual boot clients.

Work Experience

- ◆ *Tutor and Demonstrator – Monash University (Clayton, Victoria, Australia) (February 2003 – November 2004)*
CSE1303 (Computer Systems): Advanced C programming and assembler (MIPS), CSE2302 (Operating Systems), CSE2303 (Formal Methods 1): Theory of computing – Languages, Turing Machines, etc., CSE2304 (Data Structures and Algorithms), CSE2305 (Objected Oriented Software Engineering): C++ programming and concepts, CSE3305 (Formal Methods 2): Coding theory, Information theory,
- ◆ *C# Programmer – Monash University (Clayton, Victoria, Australia) (7 January 2003 – 18 February 2003)*
Implemented the Expectation Maximisation algorithm in C#, primarily for clustering web usage. Complexity.
- ◆ *PERL Programmer (Wheelers Hill, Victoria, Australia) (January 2002– March 2002)*
Worked as a PERL programmer to automate some administration tasks on a network.
- ◆ *Contract – Network Administrator, MouseSoft Computing (Mt, Waverley, Victoria, Australia) (2002)*
Installed Linux based firewall. Administered tightening of security and set up IP masquerading for a private network to access the Internet.
- ◆ *Contract – LaTeX programmer (Mulgrave, Victoria, Australia) (2001)*
Produced LaTeX code to be used as a template to automate the typesetting of a car magazine.
- ◆ *Contract – Technical Editor, Connectiva Linux (Rio, Brazil) (2001)*
Worked as a technical editor to proof read and correct the translation (Portuguese to English) of two technical sections of the Connectiva Linux users' guide.

References

1. *Dr. David Albrecht (Senior Lecturer)*
School of Computer Science and Software Engineering
Monash University, Clayton, Victoria, Australia.
Phone: +61-3-9905-5526
David.Albrecht@csse.monash.edu.au
(Employer for CSE2303, and CSE1303; supervisor for EM project)
2. *Professor John Crossley*
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Monash University, Clayton, Victoria, Australia.
Phone: +61-3-9905-5206
John.Crossley@csse.monash.edu.au
(Employer for CSE3305)
3. *Associate Professor Graham Farr*
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Monash University, Clayton, Victoria, Australia.
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(Supervisor for final year project)