

Curriculum Vitae

Dr A. Ruwan Weerasinghe

OFFICE: University of Colombo School of Computing
35, Reid Avenue, Colombo 7, Sri Lanka.
Tel: +(94-1) 581245 - 8; Fax: +(94-1) 587239
Email: arw@ucsc.cmb.ac.lk

RESIDENCE: 16, St. Josephs Road, Nugegoda, Sri Lanka
Tel: +(94-1) 853359

Personal Information

Date of Birth: 9th June, 1960
Sex: Male
Nationality: Sri Lankan

Overview

With a first degree in mathematics and statistics, I ventured into the field of IT and Computer Science through postgraduate study in UK and have been involved with the many facets of the IT industry in Sri Lanka since then. Beginning with small scale projects and feasibility studies for state sector organisations, I have been consulted on numerous projects mainly via the Computing Service Centre (CSC) of the University of Colombo and the Council for Information Technology of Sri Lanka (CINTEC). I have also been part of the pioneering bodies concerned with the introduction of Internet in Sri Lanka through both the Lanka Educational And Research Network (LEARN) and the CINTEC Internet Initiative. On this front, I also served as an Instructor for the International Internet Society involved in training network personnel in developing countries. My interest in IT has also taken me to the area of competition, where I have been responsible for the Sri Lankan team for the International Olympiad in Informatics held annually around the world. As an academic, I have enjoyed teaching many students from various backgrounds in all aspects of IT and Computer Science. My research interests have been in various aspects of Human Language Processing in computers, particularly in Machine Translation.

Qualifications

1991 - 1994

Ph.D. in Natural Language Processing

*Department of Computing Mathematics,
University of Wales College of Cardiff, UK*

"Probabilistic parsing in systemic functional grammar". The research focused on designing and implementing an automatic parser based on a functional analysis of English grammar, which would produce a richly annotated output for a large subset of common language constructions using probabilistic knowledge to guide it.

1989 - 1990

M.Sc. in Computing

University of Wales College of Cardiff, UK

Subjects: Pascal, Data Structures, Algorithms, Compilers, Artificial Intelligence, Prolog and Expert Systems, Parallel Computing, Data Security and Natural Language Processing. Dissertation submitted on *"A chart parsing approach to building a systemic parser for a non-trivial subset of English"*.

1980 - 1984

B.Sc. General (First Class)

University of Colombo, Sri Lanka.

Subjects: Mathematics and Statistics.

An introductory level computing course including a small project was also part of the above degree.

Awards and Grants

- 2002 *US-Sri Lanka Fulbright Commission* – Senior Scholar Fellowship for undertaking research into statistical machine translation techniques at Carnegie-Mellon University, USA.
- 2001 *European Research Consortium in Informatics and Mathematics* – Research Fellowship for undertaking research into text alignment techniques at INRIA, France.
- 1983 *Department of Mathematics, University of Colombo* – V.W. Samaranyake award for best Statistics student of the year.

Key Qualifications

- Visiting ERCIM Fellow at INRIA, France (2001) and Visiting Fulbright Senior Scholar at Carnegie Mellon University, USA (2002)
- Instructor for the Internet Society at International Networking Workshops (1996 to 2000)
- Member of Presidential Task Force Subcommittee on Information Technology (1998)
- Member of CINTEC Committee on Internet in Sri Lanka responsible for the national internet initiative in general and currently for the National Network Information Centre in charge of Domain Name Registration in Sri Lanka (1996 – todate)
- Member of the Panel of the Sri Lanka Domain Name Registry (LK domain), 1999 – to date
- Member of the CINTEC Committee on the International Olympiad in Informatics (1995 to 2001), Chairman 1997-2000
- Member of the Organising Committee of the International Information Technology Conference (IITC'98) held in Colombo, Sri Lanka, 1998
- Member of the Organising and Programme Committees and Referee for the International Information Technology Conferences (IITC'99 & IITC2000), Colombo, Sri Lanka.
- Member of the Sri Lanka Inter University Computing Committee (SLIUCC), responsible for Computer Science curriculum and staff development in the universities of Sri Lanka (1995 to 2000)
- Founder Member of the Lanka Education And Research Network (LEARN) Management Committee (1996 to 2001) responsible for networking and internet infrastructure in the university and research institutions in Sri Lanka.
- Represented Sri Lanka as Deputy Team Manager and Team Manager for the Sri Lankan team to the International Olympiad in Informatics (in 1995 and 1997/2000 respectively)
- Founder Member of the University of Colombo Networking Technical Committee (1996 to 2001)
- Vice Coordinator and University of Colombo Representative for the Sida-IT project for enhancing IT training and the development of computer networking and internet infrastructure in Sri Lankan universities and research institutes (1998 - todate)
- Member of the Asian Development Bank (ADB) Personnel Development Project Subcommittee in Information Technology 1996/1997
- Member of the Expert Group and the Technical Evaluation Committee of the ADB Personnel Development Project Information Technology packages
- Acting Director, University of Colombo School of Computing (Mar 2003 – todate)
- Director, Institute of Computer Technology, University of Colombo (April-July 2001)
- Acting Director, Institute of Computer Technology, University of Colombo (Oct./Nov. 1999)
- Head, Department of Computation and Intelligent Systems, University of Colombo School of Computing (Jan 2003 – todate)
- Represented Director in Senate and other University bodies while being Director and Acting Director, ICT and Acting Director of the UCSC
- Coordinator of the MSc in Computer Science Programme (1996 to 2001)
- Coordinator of the MSc in Advanced Computing Programme (Jan 2003 – todate)
- Coordinator for Computing components of ADB and Sida-IT projects at the University of Colombo (1997 to 2001)
- Acting Academic Coordinator for the Bachelor of Information Technology External Degree Programme of the UCSC (Feb – Apr 2003)
- External Examiner for Computer Science courses offered in the BSc degree, University of Ruhuna (1998) and Eastern University of Sri Lanka (1997 to 2001)

- Visiting Lecturer in Computer Science, University of Moratuwa (1996) and University of Kelaniya (1995 to 1997)
- Visiting Lecturer in various IT related topics, Institute of Computer Technology (1991 to 2001)
- Visiting Lecturer in Computer Science, National Institute of Business Management (1997 and 1998) and the London University External Degree Programme at the Royal Institute.
- Member of the Higher Degrees Committee of the Faculty of Science, University of Colombo (1996 to 2000)
- Consultant for the Computing Services Centre of the University of Colombo (1994 to date)
- Member of many IT and Networking Tender Evaluation Committees in the University and Government sectors
- Member of the Academic Committee of the Institute of Computer Technology (1996 to 2001)
- Referee of papers for IITC, SLAAS, CSSL conferences, ERU Symposia and the Jaffna Science Association at various times ranging from 1997 to date.
- Supervisor of MPhil Candidates in the Faculty of Science, University of Colombo (1996 to date) and the Open University of Sri Lanka (1996 to date) and Second Supervisor of 2 PhD candidates of the University of Colombo.
- Founding Member of the informal Artificial Intelligence Research Group initially involved in awareness programmes through universities and SLAAS in Sri Lanka
- Member of the Council of the Fellowship of Christian University Students in Sri Lanka (1995 to 2001), Chairman 1997-1999

Skills

- Formulating project proposals and executing Action Plans thereof on small and medium scale university and national level projects.
- Research in Natural Language Processing technology, including those associated with a functional analysis of English, data-driven language processing and machine translation
- Teaching undergraduate and postgraduate courses in subjects such as Pascal and Java Programming, Operating Systems, Compilers, Natural Language Processing, Logic Programming and Artificial Intelligence.
- Teaching personnel in industry at various levels especially on the emerging technologies associated with the Internet.
- Organising and administering courses at higher management levels on customised topics.
- Planning and implementing curricula at the undergraduate and postgraduate levels, both at the University of Colombo and other universities under the UGC.
- Relating to and building confidence in students and staff through interpersonal skills.
- Undertaking consultancy in computerisation and networking.
- Skilled in Internet technologies such as HTTP/HTML and XML, and programming languages such as Assembler, Pascal, Prolog, Pop-11 and Java.
- Experience with operating environments including Windows, NOVELL, Macintosh and Unix including X Windows.

Experience

Head

Department of Computation and Intelligent Systems, University of Colombo School of Computing, Colombo, Sri Lanka.

As a HoD of one of the three Academic Departments of the School of Computing, I am responsible for all undergraduate and postgraduate courses offered by members of the department as well as for planning and innovating the academic programme the school offers in consultation with the heads of the other two departments. Apart from the functions of curriculum design and course delivery matters that I handle through the Academic Syndicate, I

am also part of the Board of Study for Research and Higher Degrees through which our postgraduate and research programmes are coordinated.

- 2002 **Visiting Research Scholar**
Language Technology Institute, School of Computer Science, Carnegie Mellon University, USA
 As a Fulbright Senior Research Scholar, I spent 9 months in one of the world's leading Computer Science Schools specifically attached to its specialised Language Technology Institute (formerly also the Center for Machine Translation) and associated with its Rapidly Adaptable Data Driven Machine Translation research group. I also visited other universities in the US, gave seminars and conference presentations and had discussions on various topics including admission procedures, research mechanisms and possible collaboration.
- 2001 Jul - Dec **ERCIM Research Fellow**
Institut National de Recherche en Informatique et en Automatique (INRIA), Nancy, France.
 As just the second Asian (the only previous being a South Korean) to be awarded the European Research Consortium in Informatics and Mathematics Fellowship, I had the privilege of working for 9 months as a visiting researcher in Europe's premier research institute in Computer Science, INRIA – the home of ERCIM. Apart from having access to state of the art resources, I was also able to meet many potential future research collaborators.
- 2001 Apr-Jul **Director**
Institute of Computer Technology, University of Colombo, Sri Lanka.
 As the head of one of the pioneering IT educational institutes in Sri Lanka, my responsibilities include training a staff with cutting-edge technology, promoting IT education with special emphasis on standards, advising the university, the University Grants Commission and other bodies on IT education, providing technical assistance to public sector computerisation and liaising with the IT industry in order to make training and development effective and relevant. Apart from this brief appointment as director, I also was also Acting Director at various periods during 1999 and 2000.
- 1994 - 2001 **Senior Lecturer in Computer Science**
Department of Computer Science, University of Colombo, Sri Lanka.
 As a senior member of staff of one of the premier institutions for IT education in Sri Lanka, my tasks are many and varied, ranging from teaching and curriculum development to planning, administration, consultancy and research. Apart from this I also act as the postgraduate coordinator and interact with other departments and faculties within the university and assist other universities through the University Grants Commission.
- 1993 **Computer Advisory Assistant** (part-time)
Computing Centre, University of Wales College of Cardiff
40 Park Place, Cardiff CF1 3BB, UK
 As a member of the college-wide advisory team, I provided advice and technical support in IT from a helpdesk to members of the university. The applications supported were MS Access, CorelDraw, Excel, INGRES, ORACLE, SPSS, Word, etc., over a NOVELL network.
- 1991 - 1994 **Computer System Administrator** (part-time)
Computational Linguistics Unit, University of Wales College of Cardiff, UK.
 The work mainly involved the running of a Sun SPARCstation network of four machines connected to the campus network and also forming a local network for resource sharing. In addition two Macintosh and one IBM compatible system(s) were also supported with all having access to a local Laser Printer.

- 1991 - 1994 **Lecturer in Computer Science**
Department of Statistics and Computer Science, University of Colombo, Sri Lanka.
 Most of these initial years in academia were spent in studying the fast growing technology associated with PC's. Apart from this, I taught courses on Introduction to Computers and IT, File Processing and Operating Systems. Part of this work involved curriculum design.
- 1988 - 1991 **Instructor in Computer Technology**
Institute of Computer Technology, University of Colombo, Sri Lanka.
 This Japanese Government funded project to set up a postgraduate training programme for producing Systems Analysts and Programmers was a pioneering effort in fostering and IT expertise in Sri Lanka. As part of the initial team involved in this initiative I had much experience in working as a team, working with foreign IT experts and developing curricula. In the last of these I made significant contributions to incorporate PC-based state-of-the-art technology into the formal course structure.
- 1987 - 1988 **Systems Analyst**
The Open University of Sri Lanka
 The work here mainly involved designing and supporting an off-line transaction processing environment for maintaining student records including marks and fees. Owing to the large numbers of records handled this was a very critical operation.
- 1985 - 1987 **Programmer/Analyst**
The Rubber Research Institute of Sri Lanka
 Towards this latter part of my service at the RRI I was chiefly involved with supporting the computing equipment and programming aspects of the work done in the Institute. Apart from this I also had to coordinate activities between the RRI and the University of Colombo who were involved in a joint project with the University of Reading, UK.
- 1984 - 1985 **Research Assistant**
The Rubber Research Institute of Sri Lanka
 In my first job after graduation, I was involved both in a research associate capacity and a statistical and computing advisor for other researchers at the same time. The computing environment was restricted to PC-based stand-alone processing.
- 1980 **Audit Trainee**
Ford Rhodes, Thornton and Company Limited
 While carrying out my duties as an audit trainee I also reached upto the then Part I (third exam) of the ICMA (UK) and the Preliminary level of the Institute of Chartered Accountants (SL) before I decided to join the degree programme in Science at the University of Colombo.

Teaching

I have taught numerous courses in Computer Science and IT programmes at the tertiary and continuing education levels on subjects ranging from Introduction to IT and Pascal and Java Programming to Operating Systems, Compiler Theory and Artificial Intelligence.

I have also lectured on short courses on Internet Related technologies to the industry, including regional and International level courses through the Internet Society. In addition to this I have also been involved in training students and staff who train students for the International Olympiad in Informatics.

Consultancy

I have also been consulted on numerous occasions on various aspects of curriculum design for IT and Computer Science programmes and courses including those of a national scope via the Tertiary and Vocational Education Commission (TVEC) and the Council for Information Technology (CINTEC).

My consulting experience in the IT industry ranges from feasibility studies in many state computerisation projects including the Immigration Office, Registrar of Persons and SLBC, to tender specification and evaluation for many public sector tenders. I have also evaluated network and internet based tenders in the university sector. In addition, I have also been consulted on the selection, award and implementation of software solutions for various institutions including for troubleshooting projects that delayed or failed.

Workshops and Seminars Conducted

- Nov. 2002 Seminar on “An experiment using Statistical Machine Translation on small and messy corpora” at the Rapidly Adaptable Data-Driven Machine Translation Research Group at the School of Computer Science of the Carnegie-Mellon University, Pittsburgh.
- Oct. 2002 Seminar on “Why the Translate Button Does not work (yet)” at the Computer Science Research Seminar Series conducted by the Department of Mathematics and Computer Science of the San Jose State University, San Jose, California.
- Mar. 2002 Seminar on “Non-knowledge intensive text alignment and beyond”, Séminaire de l'équipe du LED à La Bresse at INRIA, Nancy, France.
- Jan. 2001 Lecturer, Full-day workshop on “Java and XML” at the International Information Technology Conference (IITC'00), Colombo, Sri Lanka. (<http://www.lanka.net/iitc2000/workshops.html#Java and XML>)
- Jul. 2000 Resource Person, “Internet Information Services” Track of the Internet Society's Network Technology Workshop. July 2000, Yokohama, Japan. (<http://www.t3.isocws.isoc.org/www/html/home/start.htm>)
- Jun. 1999 Instructor, “Network Navigation and Services” Track of the Internet Society's Network Technology Workshop. June 1999, San Jose, USA. (<http://www.isocws.isoc.org/>)
- Jul. 1998 Instructor, “Network Navigation and Services” Track of the Internet Society's Network Training Workshop. July 1998, Geneva, Switzerland. (<http://www.isocws.isoc.org/>)
- Jun. 1997 Instructor, “Network Navigation and Services” Track of the Internet Society's Network Technology Workshop. June 1997, Kuala Lumpur, Malaysia. (<http://www.isocws.isoc.org/>)

Publications

- Oct. 2002 Weerasinghe, Ruvan (2002). Bootstrapping the Lexicon Building Process for Machine Translation between `New' Languages. Proceedings of the 5th Conference of the Association for Machine Translation in the Americas, AMTA 2002 Tiburon, CA, USA. Pp. 177-186.
- Oct. 2000 Abeywardene, A.M.D.V. and Weerasinghe A.R. (2000). A multi-agent framework for mobile agents. Proceedings of the 3rd International Information Technology Conference (IITC'00), Colombo, Sri Lanka. pp 25.
- Oct. 2000 Jayalath, J.A.N.S. and Weerasinghe, A.R. (2000). An Off-line Internet agent for searching documents based on English descriptions. Proceedings of the 3rd International Information Technology Conference (IITC'00), Colombo, Sri Lanka. pp. 27.
- Oct. 2000 Senanayake, R., Weerasinghe, A.R. and Kodikara, N.D. (2000). A platform independent virtual reality graphical user interface. Proceedings of the 3rd International Information Technology Conference (IITC'00), Colombo, Sri Lanka.
- Oct. 1998 Mohanaraja, R. and Weerasinghe, A.R. (1998). An English to Tamil translator's workbench. Poster paper at the International Information Technology Conference 1998, In Proceedings of IITC'98, Colombo, Sri Lanka.

- Feb. 1998 De Zoysa, T.N.K and Weerasinghe A.R. (1998). A network friendly search engine for the internet. Proceedings of the Multi-disciplinary International Conference on the Occasion of the 50th Anniversary of Independence of Sri Lanka, University of Peradeniya, Sri Lanka.
- Feb. 1998 Habarakada, S and Weerasinghe A.R. (1998). DBPP: A database publishing protocol for the world wide web. Proceedings of the Multi-disciplinary International Conference on the Occasion of the 50th Anniversary of Independence of Sri Lanka, University of Peradeniya, Sri Lanka.
- Feb. 1998 Keppitiyagama, C. and Weerasinghe A.R. (1998). Case study in employing digital signal processing and probabilistic pattern matching techniques for computer based speech recognition. Proceedings of the Multi-disciplinary International Conference on the Occasion of the 50th Anniversary of Independence of Sri Lanka, University of Peradeniya, Sri Lanka.
- July 1997 Jayalal, D.A. and Weerasinghe, A.R. (1997). Towards the development of a grammar checker for sinhala. Proceedings of the 16th National Information Technology Conference of the Computer Society of Sri Lanka, Colombo, Sri Lanka. pp 24-31.
- July 1997 Seher I. and Weerasinghe A.R. (1997). An English to SQL translator for database querying. In Proceedings of the 16th National Information Technology Conference of the Computer Society of Sri Lanka, Colombo, Sri Lanka. pp 43-53.
- July 1997 Wijeyaratnam A.C.A. and Weerasinghe A.R. (1997). A foundation for a parallel processing environment. In Proceedings of the 16th National Information Technology Conference of the Computer Society of Sri Lanka, Colombo, Sri Lanka. pp 88-103.
- Sept. 1996 Premaratne H.L. and Weerasinghe A.R. (1996). A Neural Network Approach to Image Compression and Transmission. In Proceedings of the 15th National Information Technology Conference of the Computer Society of Sri Lanka, Colombo, Sri Lanka.
- Sept. 1996 Athukorala D.A.S. and Weerasinghe A.R. (1996). A Pascal to C Translator. In Proceedings of the 15th National Information Technology Conference of the Computer Society of Sri Lanka, Colombo, Sri Lanka.
- July 1996 Rajapakse R.K., Seneviratne E.K. and Weerasinghe A.R. (1996) A Neural Network approach to recognising Sinhala Script. In Proceedings of the South East Asian Regional Computer Confederation (SEARCC'96) Conference, Bangkok, Thailand.
- Sept. 1995 Weerasinghe A.R. (1995). A 'Head-Outward' Parsing strategy for systemic functional grammar. In Proceedings of SEARCC'95, Colombo, Sri Lanka. pp 192-202.
- July 1995 Weerasinghe A.R. (1995). The Local Language Initiative: Some preliminaries to multi-language processing. ELSNET Summer School on Language and Speech Communication : Multilinguality, University of Edinburgh, UK.
- July 1994 Weerasinghe A.R. (1994). Using a probabilistic parsing scheme for a systemic functional grammar. ELSNET Summer School on Language and Speech Communication : Corpus-based Methods, OTS, Utrecht University, The Netherlands.
- July 1994 Weerasinghe A.R. Probabilistic parsing in Systemic Functional Grammar. PhD. Thesis, Department of Computing Mathematics, University of Wales College of Cardiff, UK.
- July 1994 Weerasinghe A.R. (1994). A 'head-outward' probabilistic parsing strategy for systemic functional grammar. 3rd International Conference on the Cognitive Science of Natural Language Processing, Dublin City University, Ireland.
- Aug. 1993 Weerasinghe A.R. and Fawcett R.P. (1993). Probabilistic incremental parsing in systemic functional grammar. In *Proceedings of the 3rd International Workshop on Parsing Technologies*, pp 351-367. ACL - SIGPARSE conference, University of Tilburg, The Netherlands.
- April 1993 Weerasinghe A.R. "A Probabilistic Functional Parser". Poster presentation at the Postgraduate Workshop for AI researchers held at AISB'93 in Birmingham, UK.
- Feb. 1991 Weerasinghe A.R. A chart parsing approach to building a systemic parser for a non-trivial subset of English. Proceedings of the Eleventh National Computer Conference of Sri Lanka, Colombo, Sri Lanka. pp 131-143.
- Oct. 1990 Weerasinghe A.R. A chart parsing approach to building a systemic parser for a non-trivial subset of English. Msc. Dissertaion, Department of Computing Mathematics, University of Wales College of Cardiff, UK.

Sept. 1984 Liyanage A.De S. and Weerasinghe A.R. (1984). A Crop-Weather Calendar for Rubber. Proceedings of the International Rubber Conference, Colombo, Sri Lanka. pp 354-366

Internal Publications

Mar. 2003 Rules and Regulations, and By Laws of the Master Science in Advanced Computing Programme of the University of Colombo School of Computing, 2003

Apr. 2001 Fiscal Year 2000 Survey for Joint Promotion Programme in Information Technology Human Resource in Sri Lanka, Survey on behalf of the Japan International Cooperation Agency, 2001.

July 2000 IT Manpower and Training Survey of the South East Asian Regional Computer Confederation (SEARCC) conducted in Sri Lanka by the Computer Society of Sri Lanka 1999/2000

July 2000 IT Training and Accreditation Study conducted for the Tertiary and Vocational Education Commission (TVEC) 1999/2000

Oct. 1998 Rules and Regulations of the Master of Science (Computer Science) Programme of the University of Colombo, 1998

Other Presentations

Oct. 1999 Weerasinghe A.R. "IT and Information: Convergence or Divergence". Presented at the IFLA/SLLA International Workshop on Networking for Effective Library and Information Services, held in Colombo, Sri Lanka.

July 1999 Weerasinghe A.R. "Organising the Web with XML". Presented at the LEARN seminar on Internet Technology, National Science Foundation (NARESA), Sri Lanka.

July 1997 Weerasinghe A.R. "Caching and Indexing of Web Sites". Presented at the LEARN seminar on Internet Technology, University of Sri Jayawardenapura, Sri Lanka.

June 1997 Weerasinghe A.R. "Delivering Dynamic Web Content". Presented at the seminar to celebrate the 10th Anniversary of the ICT in Colombo, Sri Lanka.

April 1995 Weerasinghe A.R. "The World Wide Web : Traversing the Internet". Presented at the seminar on Enhancing Business Efficiency through Voice and Data Communication Facilities organised by the Chartered Institute of Management Accountants in Colombo, Sri Lanka.

Jan. 1995 Weerasinghe A.R. "The Internet - A World Wide Web". Presentation made at NETCON'95 at the University of Moratuwa, Sri Lanka.

July 1993 Weerasinghe A.R. "Strategies for parsing Systemic Functional Grammar". Presentation made at the Postgraduate Research Seminar Series of the IKBS Group, Department of Computing Mathematics, University of Wales College of Cardiff, UK.

Personal Skills and other IT Experience

Dealing with people in a technological environment has taught me the value of patience, tolerance, and commitment. Research itself presents many challenges that demand self-motivation, creative thinking and innovative solutions. As a team member I have contributed towards the departmental effort to improve IT curricula, acquire state-of-the-art computing resources and exploit Internet and World-Wide-Web technologies for the benefit of the community.

Professional Membership

- Associate of the *Institution of Electrical and Electronic Engineers (IEEE)* and in particular its *Computer Science Section (IEEE-CS)*, which is the leading international forum on Computer Science and Engineering education and research.
- Member of the *Internet Society (ISOC)*, the premier international body concerned with the development of Internet Technology, for which I served as a course Instructor at the annual workshops in the past.