CURRICULUM VITAE

1 PERSONAL DATA

1.	NAME	:	**Dilip Antony Joseph**
2.	DATE OF BIRTH	:	25 February, 1982
3.	PERMANENT ADDRESS	:	37/1832, Elamkulam Road, Cochin - 17, Kerala, India
4.	CURRENT ADDRESS	:	Room No: 234, Saraswathi Hostel, IIT Madras, Chennai - 36, India
5.	EMAIL	:	dilip@peacock.iitm.ernet.in dilujoseph@yahoo.com
6.	HOME PAGE	:	http://dilu.tripod.com

2 ACADEMIC DATA

ULTIMATE DEGREE OBJECTIVE	:	PhD
CURRENT LEVEL OF STUDY	:	4th Year BTech, Computer Science & Engineering, Indian Institute of Technology, Madras
CURRENT POSITION IN BRANCH	:	2nd
CURRENT CGPA	:	9.74/10 (at the end of 6 semesters)
MAJOR GPA	:	9.9/10 (at the end of 6 semesters)
MINOR STREAM	:	Operations Research
MINOR GPA	:	10/10 (at the end of 6 semesters)
EXAMINATION RECORD	:	

EXAMINATION	BOARD	PERFORMANCE
Semester 6	Indian Institute of Technology, Madras	10 /10
Semester 5	Indian Institute of Technology, Madras	9.87 /10
Semester 4	Indian Institute of Technology, Madras	9.87 /10
Semester 3	Indian Institute of Technology, Madras	9.70 /10
Semester 2	Indian Institute of Technology, Madras	9.54 /10
Semester 1	Indian Institute of Technology, Madras	9.52 /10
Std XII (AISSCE)	Central Board of Secondary Education	97 %
Std X (AISCE)	Central Board of Secondary Education	93.2%

3 STANDARDISED TEST SCORES

GRE	Quantitative - 800/800 Verbal - 740/800 Analytical Writing - 6/6
TOEFL	300/300
Subject GRE	Exam given on November 8, 2003

4 COMPUTER PROFICIENCY

- **Languages** : C, C++, Java, Pascal, Prolog, PERL, SML, Verilog, UNIX shell scripting, x86 Assembly Language, Parsec

- **Other Tools** : Lex, Yacc, XML, HTML, GloMoSim Mobile Simulation Library, GPSS, Eclipse, ModelSim, Leonardo, Magic VLSI Layout tool

- **Platforms** : Linux, Solaris, AIX, Windows

5 RESEARCH INTERESTS

My undergraduate study at IIT Madras and my summer internships provided me a rich opportunity to be involved in research on a variety of Computer Science topics. Listed below are the two fields of study that have interested me the most.

- **Wireless Networks** : I am currently working on Heterogeneous Wireless networks as part of my BTech Project under the guidance of Professor C. Siva Ram Murthy at IIT Madras. I have proposed different types of user profiles for mobile nodes and have studied their impact on network performance through extensive simulations in GloMoSim. A paper detailing the results of this study has been communicated to the IEEE ICC, Paris 2004. I am working on analytically deriving expressions for performance bounds of wireless adhoc networks with infrastructure support. Expressions for network performance in the presence of users with varied profiles are also to be derived and verified against the simulation results. I am also currently developing user profile-aware routing and handoff protocols for heterogeneous wireless networks.

- **Bioinformatics** : I was exposed to the exciting field of bioinformatics while working under Professor M Vidyasagar, Executive VP, Tata Consultancy Services, as part of the Indian Academy of Science Summer Fellowships 2002. My interests lie in the computational methods used to decipher the structure of protein molecules. I developed an Artificial Neural Network based Protein Secondary Structure predictor, which performed very well at CASP 5 - A Biannual International Protein Structure Prediction Competition.

- **Databases and XML** : I am interested in research on Database Management and XML. This interest grew as a result of the Basic and Advanced level courses in Databases I took up at IIT. My summer internship at IBM India Research Lab on Autonomic Data Management and the RefKeep Project I completed has further sharpened this interest. I have worked with query languages like LOREL, UnQL, XML-QL and QUILT. I am also interested in taking up some of the challenging problems in the field of semi-structured data.

6 PROJECTS

(For detailed descriptions about the projects, please visit http://dilu.tripod.com/research)

1. "**The Impact of User Behaviour on the Interoperability of Wi-Fi hotspots and Packet Cellular Networks**" - Under the guidance of Prof. C. Siva Ram Murthy (Dept. of CSE, IIT Madras)

2. "**Policy Framework for Autonomic Data Management**" - Under the guidance of Dr. Mukesh Mohania, Project Manager, IBM India Research Laboratory (during May-July 2003)

3. "**Protein Secondary Structure Prediction Using Artificial Neural Networks**" - Under the guidance of Professor Vidyasagar M., Executive Vice President, Tata Consultancy Services, as part of the Indian Academy of Science Summer Fellowships 2002

4. **"RefKeeper - A personal Bibliography Assistant"** - An XML/JAVA based application which automates the storage and retrieval of research and reference material. (Project supervised by Dr. Deepak Khemani, Asst. Prof. Dept. of CSE, IIT Madras)

5. **"Superscalar processor"** - This group project involving 15 students, aims to design and implement a super scalar processor in Verilog (as part of Computer System Design Course). We have already ready with a preliminary implementation. I am one of the coordinators of this project.

6. **"ConMan - A Generic Online Contest Management Framework"** - A framework for building and conducting online competitions was developed as part of the Software Engineering course. The ease with each any online competition can be built was demonstrated by implementing a Programming Contest Manager using the ConMan framework.

7. **"IJVM processor"** - The IJVM[1] processor was implemented in Verilog as part of the CAD for VLSI course.

8. **Pascal Compiler** - A compiler for Pascal was developed as part of the Language Translators Course. It correctly compiled the recursive quick sort program with parameter passing by reference, used as a benchmark.

9. **File Compression Schemes** - An LZW-Huffman encoding based file compression program was implemented as part of the Algorithms course.

10. **"Route Finding using A* Algorithm"** - This project involved building a system to find the shortest route between two places on a map using the Weighted A* algorithm.

11. **"File Transfer Protocol"** - As part of the Computer Networks course, I implemented a multi-threaded FTP server and client.

12. **"Mobile IP - Term Paper"** - As part of the Mobile Computing course, I studied the various aspects of Mobile IPv6 and compared it with the mobility support of IPv4. Some problems with mobile IPv6 were also identified and solutions were attempted.

13. **"VoIP - A Comprehensive Study"** - A detailed study of the suite of protocols involved in Voice over IP was undertaken as part of the Computer Networks course.

7 PUBLICATIONS

(The papers may be downloaded from http://dilu.tripod.com/research)

1. Dilip Antony Joseph, B S Manoj, C Siva Ram Murthy, **"The Interoperability of Wi-Fi Hotspots and Packet Cellular Networks and the Impact of User Behaviour"**, communicated to IEEE ICC 2004, Paris.

2. Dilip Antony Joseph, Mukesh Mohania, Manoj Kumar, Manish Bhide, Ajay Gupta, Mukul Joshi, **"Defining Data Administration and Operational Policies at the Business Object Level for E-Governance Applications"**, to appear in the proceedings of the First International Conference on E-Governance, New Delhi, December 2003. An extended version of this work is to be submitted to the IBM Systems Journal.

3. Dilip Antony Joseph, **"An Integrated Approach to Software Engineering using XML"**, Proceedings of ITPC 2003 (International Conference on Information Technology - Prospects & Challenges in the 21st century), Kathmandu, May 2003

4. Dilip Antony Joseph, M Vidyasagar, Sharmila Mande, "**Highly Trained Neural Network Predictors**", CASP5 Method Abstracts

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[1]Integer Java Virtual Machine

8 TEACHING EXPERIENCE

- I am currently a Teaching Assistant for the course "Introduction to Computing" (CS110, August-December 2003) offered by the Department of Computer Science for first year students. My responsibilities include supervising students in the lab, helping them with the assignments and coursework, and correcting examination answer papers.

9 ACADEMIC ACHIEVEMENTS

- JNCASR[2] Summer Research Fellowship 2003

- Indian Academy of Science Summer Fellowship 2002

- Overall Second position in the BTech programme out of more than 420 students.

- Gold Medalist at the Indian National Physics Olympiad (InPho 2000, Top 35 out of 20923 candidates)

- THIRD rank in the Regional Mathematics Olympiad 1999

- National Talent Search Examination (NTSE) Scholar

- IIT Madras Institute Merit Prize for scoring the second highest CGPA in first year.

- Excellent performance in CBSE Std. XII Examination with 97% marks (Mathematics - 100, Physics, Chemistry & Computer Science - 99)[3]

- National Standard Examination in Physics 2000 - National top 1%

- Qualified to appear in the Indian National Chemistry Olympiad 2000.

- Shaastra 2002 Paper Presentation Competition - Second Prize

- First Prize Winner in General Proficiency for classes V to XII

- Kerala Common Entrance Test (CET) - Rank 5

- Cochin University of Science and Technology CET - Rank 9

- National Science Olympiad 2000 - Rank 35

- Malayala Manorama Scholarship 2000

- Jagriti Independence Scholarship 1998 &2000

- First Rank Holder of All Kerala Bhavans Scholarship Examination (1995 & 1996)

- 15th Rank Holder of All India Science Talent Examination conducted by Universal Group of Institutions (1998 & 2000)

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[2] Jawaharlal Nehru Centre for Advanced Scientific Research
[3] All India highest score was 97.6%

10 EXTRA CURRICULAR ACTIVITIES

- I was chosen as the Best Outgoing All Rounder in Std. IX , X and XII.

- Quizzing - I am an avid quizzer and have won many inter-school quiz competitions

- Public Speaking - I enjoy participating in extempore speech and debate competitions.

- Playing basketball - I am a member of the National Sports Organization, IIT Madras and of my hostel basketball team.

11 ORGANIZATIONAL INVOLVEMENT

11.1 COLLEGE

- Shaastra 2003 [4] - Core Group Member

- Extramural Lecture Coordinator 2002-2003

- IT Quiz Coordinator and quiz-master at Shaastra 2002

- Web Design & Online Events Coordinator for Shaastra 2002

11.2 SCHOOL

- School Captain during 1999-2000

- General Convener of Magnum Opus 1998 inter-school cultural festival

- Member of School Student Council

- Vice Captain of Periyar House

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[4]IIT Madras' All India Technical Festival