

Yogesh Piolet Thulasidharan

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OBJECTIVE

Seeking an internship opportunity for Summer 2012 where I can utilize my research and development skills, and make significant contributions to the product development lifecycle.

EDUCATION

Michigan State University

Second Year Ph.D Candidate, Electrical & Computer Engineering 3.75/4.0 Aug '10 – July '14
(expected)

Indian Institute of Technology, Kharagpur

Master of Technology, Information Technology 9.27/10.0 July '08 - June '10

Visveswaraiah Technological University, Belgaum

Bachelor of Engineering, Computer Science & Engineering 77.81/100 Sept '04 - May '08

RESEARCH EXPERIENCE

Doctoral Research Research Assistant, Michigan State University Aug '10 – Present

Dissertation: Content Dissemination in Social Wireless Network (SWNet)

- Developed a multicast routing protocol to distribute content such as videos, coupons to interested users in a SWNet
- Implemented and evaluated the performance of the proposed routing protocol using ns2 simulator and MATLAB

Human Interaction Detection (Funded by: *NASA*)

- Played the role of **Project Manager** and collaborated with a team of 5 members working alongside the client team
- Developed a TinyOS application for the measurement of human heart-rate and acceleration on a Cricket sensor node
- Integrated the software components into a complete package (wearable badge) that measured heart-rate, acceleration and sound of individuals wearing the badge. The badge also measures distance between individuals wearing the badge
- Managed the hardware components such as sensor cards, Cricket nodes for a seven-badge system with GUI
- Tested the seven-badge system rigorously before its deployment for the detection of human interaction

Human Activity Recognition (Funded by: *NIH*)

- Collaborated with a team of 3 members to develop a system of three wearable bands on wrist, thigh and ankle to recognize human activities such as sitting, standing, walking, running, lying down, jumping jacks and a few others
- Implemented the recognition of simple human activities on Mica2 nodes in TinyOS using Decision Tree classifier

Energy expenditure for computation on Mica2 sensor nodes

- Researched the energy consumed by Mica2 sensor nodes through extensive literature survey and profiling tools such as PowerTOSSIM to understand the benefits of performing computation on sensor nodes itself rather than PC/Laptop
- Developed a framework of different off-body and on-body configurations to save battery power based on this study

Masters Research Teaching & Lab Assistant, Indian Institute of Technology, Kharagpur July '09 – May '10

Thesis: Identifying Contact Patterns in Intermittently Connected Networks

(Funded by: *Department of Information Technology, Government of India*)

- Developed a centralized and distributed approach to solve the problem of finding patterns in the contact history of nodes so that this information can be used effectively in routing with lower delays in Delay Tolerant Networks

TEACHING EXPERIENCE

Indian Institute of Technology, Kharagpur

Lab Assistant Internet Technologies Lab, Graduate Course, Spring 2010 Jan '10 – May '10

Teaching Assistant Foundation of Computing Systems, Graduate Course, Fall 2009 July '09 - Dec '09

Lab Assistant Computing Systems Lab, Graduate Course, Fall 2009 July '09 - Dec '09

SKILLS

- **Operating Systems:** Windows, Linux, TinyOS
- **Programming Languages (Recently used):** C, C++, MATLAB, nesC, CGI - PERL, HTML, PHP, TCL
- **Programming Languages (Familiar with):** C#, Java (Networking, J2EE, JDBC, JSP/ Servlets, AWT, J2ME), Assembly language – 8086
- **Simulators:** Network Simulator 2 (ns2), NCTUns 6.0 network simulator
- **Databases:** Oracle, MySQL
- **Tools:** WEKA 3 Data Mining Software, MATLAB Neural Network Toolbox, Lex, YACC, Ethereal, MagicDraw UML
- **Languages:** English, Hindi, Malayalam, Kannada, Tamil (basic)

PAPERS AND PRESENTATIONS

Samantha K. Baard, **Yogesh Piolet Thulasidharan**, Marina Pearce, Muhannad Quwaider, Tara A. Rench, Dong Bo, Michael T. Braun, Subir Biswas, Richard P. DeShon, & Steve W.J. Kozlowski, *Monitoring Team Effectiveness using Wearable Sensor Network*, NASA Behavioral Health and Performance Research Workshop, Houston, Texas, August 2011.

ACADEMIC PROJECTS

Handwritten Digit Recognition Project

- Designed and evaluated different types of pattern recognition algorithms on the MNIST dataset of 60,000 images of digits and achieved an accuracy of 97.02% using Neural Networks
- Worked in a team of 2 and used WEKA 3 Data Mining Software and MATLAB Neural Network Toolbox

LAN Monitoring Tool

- Designed a mobile phone application that could perform tasks such as reading/writing files, accessing directory on machines connected to the LAN from the mobile phone and provide details about the network on the phone
- Worked in a team of 4 and implemented in J2ME and J2EE with JDBC support on Windows XP

Online Auctioning System

- Designed an information management system for auctioning commodities
- Worked in a team of 2 and implemented in PHP and MySQL

Graphics Editor

- Designed a GUI based graphics editor capable of drawing lines, boxes, circles, ellipses, webs and polygons
- Implemented functionalities to select an area on the canvas and perform clipping, rotation, scaling, saving the canvas to a file and loading it from a file
- Worked in a team of 2 and implemented in C++ on Windows XP

ACADEMIC ACHIEVEMENTS

- Topped the graduate class of Autumn 2008 at School of Information Technology, IIT Kharagpur with a SGPA of 9.12
- Ranked **193rd** amongst 18,000 students appearing for Graduate Aptitude Test in Engineering in Computer Science (**GATE – CS, 2008**)
- Ranked **10th** in the university (college rank: **1**) in the **University Level Knowledge Assessment Test ULKAT 2007** conducted by Merittrac Inc in association with Visweswariah Technological University, Belgaum
- Awarded with the Gold medal from one of my icons, Dr. Madhavan Nair G, Former Chairman, Indian Space Research Organization (ISRO) for best performance in Pre-University Examinations, 2004
- “Best Student of School”- 2002, St. Lourdes High School, Bangalore.

EXTRA-CURRICULAR ACTIVITIES

- Organized the programming contests of INTERRUPT 5.0, the annual techno-cultural fest of Dr. Ambedkar Institute of Technology, Bangalore (2008)
- Participated in national level quiz, extempore and skit competitions, and won prizes
- Participated in inter-school drama competitions and won applauds
- Team leader in organizing the annual club activities in school
- Pastime activities include learning new languages (Mandarin Chinese), gardening, watching television, fitness training