PRAVEER MANSUKHANI

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AREAS OF INTEREST

Biometric Technologies(Fingerprints), Database Systems, Document Analysis.

EDUCATION

PhD Candidate – Computer Science (Expected) Feb 2008
University at Buffalo, The State University of New York, Buffalo, NY
Dissertation Proposal: A Framework for Efficient Fingerprint Identification using a Minutiae Tree.

Master of Science – Computer Science Sept 2004
University at Buffalo, The State University of New York, Buffalo, NY
G.P.A.: 3.91/4.00

Bachelor of Engineering – Information Technology June 2002
Thadomal Shahani engineering College, University of Mumbai, India
First Class (Upper)

EMPLOYMENT & RESEARCH HISTORY

Fingerprint Similarity, Matching and Indexing Sept04 - current
Center for Unified Biometrics and Sensors (CUBS) – University at Buffalo
Currently developing indexing schemes to enable faster user identification. Also building a SVM based fingerprint verification system. Have developed metrics to evaluate the inter-user similarity of a fingerprint database. Also carried out performance analysis of different systems being developed at CUBS.

Copanion Inc. – Research Intern Feb 07 – May 07
Copanion is a tech startup based in Andover, MA
Involved in designing a C- based OCR module and implementation of a networked interface using Java web services. Also designed and developed a tool to redact confidential information from document images.

National Inst. of Health (NIH) – Research Intern June 05 – Aug 05
Was working at the Lister Hill Communication Center at the National Library of Medicine
Developed a Java-based application for automated metadata extraction from historical documents. SVMs, followed by stochastic modeling were used to automatically classify text lines from FDA court records.

LitGloss Project – Research Assistant May 04 – May 05
LitGloss is a joint project between CEDAR and the Languages Department at the University at Buffalo
Helped develop a Java applet to enable truthing and annotation of Indic languages over the web.

Center for Excellence in Document Analysis and Recognition (CEDAR) – Research Assistant Jan 03 – May 04
- Modified current HMM based handwriting recognition system for use on numeric data. Also performed various experiments on HMM for recognition of handwritten postal images and historical documents.
- Worked on a Java- based system developed for USPS to enable automatic sorting of mail.

PUBLICATIONS

"Symmetric Hash Functions for Secure Fingerprint Biometric System" - *S. Tulyakov, F. Farooq, P. Mansukhani, V. Govindaraju* - Pattern Recognition Letters, 2007

"Combining Static Classifiers and Class Syntax Models for Logical Entity Recognition in Scanned Historical Documents" – *S. Mao, P. Mansukhani, G. Thoma* – IEEE Conf. on Computer Vision & Pattern Recognition (CVPR) 2007

"Using Support Vector Machines to Eliminate False Minutiae Matches during Fingerprint Verification" – *P. Mansukhani, S.Tulyakov, V. Govindaraju* – SPIE Defense and Security Symposium 2007

"Exploring Similarity Measures for Biometric Databases" – *P.Mansukhani, V. Govindaraju* - Audio and Video based Biometric Person Authentication (AVBPA) 2005

COMPUTER SKILLS

Programming Languages	Java, C, C++, Pascal, VB.
Simulation Tools	Matlab, OPNET.
Scripting Languages	VBScript, JavaScript.

Internet Technologies	HTML , ASP, JSP, XML.
Operating Systems & Platforms	Windows 9x/NT/XP/2000, UNIX, Linux
Databases	MS Access, MS SQL Server 7.0, Oracle 9i, MySQL.
Technologies	COM and ActiveX, Java Card Development Kit, CGI, .NET Platform.

COURSE PROJECTS

Implementation of Information Retrieval System **C++**
Developed at CSE Dept – University at Buffalo Jan 04 – Apr 04
Designed and implemented an IR system on the TREC data collection using Vector Space Model and with Blind Relevance Feedback Capability.

P2P File Sharing Protocol **C**
Developed at CSE Dept – University at Buffalo Sept 03 – Dec 03
Designed and developed a distributive peer-to-peer file sharing network protocol in C, Simpella, a simpler version of the Gnutella protocol.

Mini Database System Implementation **JDK 1.4**
Developed at CSE Dept – University at Buffalo Mar 03 – May 03
Designed and implemented a mini database system to parse SQL queries, create tables and indexes, insert tuples and perform SPJ queries. B+ trees were used for query optimization.

Online Shopping Site **JDK 1.4, JSP, Java Servlets, Oracle 9i**
Developed at CSE Dept – University at Buffalo Feb 03 – Apr 03
Developed ecomazon.com, an online bookstore modeled on the lines on amazon.com. Users can buy books and visit the auction site where they can bid for items or put stuff up for sale. Recommender systems and search features were implemented.

Efficient Minimum Distance Classifier **Matlab 6.0**
Developed at CSE Dept – University at Buffalo Nov 02 – Dec 02
Construction of an efficient minimum distance classifier using clustering techniques

Mining Data for Intrusion Detection **C++**
Developed at CSE Dept - University at Buffalo Sep 02 – Dec02
Using FP-trees to detect intrusion attempts in a network. Uses existing information about network usage to model suspicious activity.

Object Sharing on Java Smart Cards **JDK 1.3 , Java Card Development Kit**
Developed at Thadomal Shahani Engineering College, Mumbai June 01 – May 02
Developed an store-specific applications for the Java Smart Card enabling users to participate in customer loyalty schemes. Requires implementation of object sharing mechanisms.

SEMINARS & TEACHING

CSE Dept, University at Buffalo - Teaching Assistant Aug 05 - current
CSE 4/589 – Modern Networking Concepts (Fall 2007)
CSE 113/114 – Introduction to Computer Programming (Spring / Fall 2006)
CSE 4/573 – Computer Vision & Image Processing (Fall 2005)
Teaching assistant for both graduate and undergraduate computer science courses. Responsibilities include conducting lectures and labs, and grading.

LiTgloss: Engineering a Digital Archive for an International Curriculum Oct 04
Presented at LACxC Conference, Binghamton University
Was a co-presenter in the LiTgloss presentation. Presented on the collection and storage techniques used in LiTgloss and demonstrated the annotation tool.

Palmprints: A Biometric Oct 04
Presented at CUBS – University at Buffalo for CSE 666 (Image Analysis)
On using human palm prints as a biometric. Overview was given of the current methods, and Hierarchial Palmprint Coding method was analysed in detail.

Securing Biometric Data Feb 03
Presented at University at Buffalo for CSE 717 (Biometrics)
On the various methods that can be used to effectively secure biometric data such as fingerprints while transmitting across the network and storing on the server.