

Manikandan Alagappan

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OBJECTIVE: Seeking a full time position as a software developer.

WORK AUTHORIZATION: F1 – International Student

EDUCATION:

- **M.S in Computer Science, University of Southern California, LA** **GPA:3.62(Expected Dec 2007)**
Related Course Work:
I) Analysis of Algorithms II) Computer Networks III) Computer Communications
IV) Security Systems V) Internetworking and Distributed Systems Laboratory
VI)Advanced Operating Systems VII) Artificial Intelligence VIII) Database Systems
- **B.E in Computer Science, Anna University, India** **(May 2006)**
First class with Distinction.

WORK EXPERIENCE:

- **Project Assistant** in OntoNotes Project at Information Sciences Institute, USC **(Jan 2007 – till date)**
Responsibilities:
Development and maintenance of Annotation Interfaces & web pages (English, Chinese & Arabic), Creation of raw data from various Corpuses (Wall Street Journal, Brown, English Chinese Treebank Corpus), Creation and management of instance of STAMP for various Corpuses, Validating and updating the Sense files using the Subversion, Supplying word lists to annotators and Extraction of annotated words.

PROJECTS:

Peer to Peer File Sharing System :

- A **P2P file sharing system** was built in C++ .It is an Anonymous P2P Network which guarantees Security and Privacy based on **FREENET**.
- **Multithreading & signal handling** was used. **SHA-1** was used to create and verify object ID.
- A **mini file system** of its own, routing, logging of messages, signing and verifying files for **Authentication using Certificates**.
- Operations on Files: storing, searching, deleting, caching. **Bloom Filters** were used for improving efficiency.

Internetworking and Distributed Systems Lab:

- Cisco IOS, Zebra, Cisco 4000 and 7000 Routers, Linux machines
- Produced Persistent Route Oscillations in BGP using Router Reflectors.

Spatial Database:

- Designed and Implemented a Java Application that queries a **Spatial Database** comprising of buildings, cameras and people. It supports **Graphical Query Language** which allows the users to **select spatial attributes for spatial queries** (e.g. selection from a map). The GQL then parses these into SQL queries, which are passed to the database.

M/M/2 Queuing Model:

- Emulated a queuing model (Time driven) which involved **Pthreads, Semaphores and Signal handling** in C.

Database Applications:

- Designed **XML schemas, XML stylesheet and Xqueries** for a **Restaurant Database**.
- **Gas Agency Application** was developed using Visual Basic as front-end and Oracle as Back-end.

Knowledge Representation:

- Implemented a **Restaurant Application in Java** using **Autonomous Agents, Knowledge Representation and A* Search**.
- Used **Powerloom & Prolog** to Model & Query a Government Knowledge Base.

Advanced Operating Systems:

Research Paper titled “**Access Control in Distributed Systems: A Survey**” was done as part of course work: The Architectures Akenti, OASIS and CARDEA were compared and a survey of Access Control Policies such as DAC, MAC and RBAC was done.

Power-aware Hybrid Intrusion Detection System in Wireless Ad hoc Networks: (April 2006)

In this project a distributed **hierarchical intrusion detection system** for ad hoc networks was developed, based on a power level metric for potential ad hoc hosts. **Iterative power-aware power-optimal solution** was proposed to identifying network monitoring nodes for distributed agent based intrusion detection. Power Loss/Availability based on Network Monitoring Estimate (PLANE metric) was used for this purpose.

PUBLICATIONS:

- **Localized Tree Change Multicast Protocol for Mobile Ad Hoc Networks (July 2006)**

Proc. of IEEE International Conference on Wireless and Mobile Communications - ICWMC 2006, IEEE Computer Society, Bucharest, Romania.

- **Hybrid Agents for Power-Aware Intrusion Detection in Highly Mobile Ad Hoc Networks (Nov 2006)**

Proc. of IEEE International Conference on Systems and Networks Communications - ICSNC 2006, IEEE Computer Society, Tahiti, French Polynesia.

SKILLS:

Programming Languages	C, C++, Java, C#, VB, Python, XQuery
Web Technologies	HTML, XML, CSS, PHP
DBMS	Oracle, SQL, PL/SQL