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GAUTHAM K.DORAI

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Objective

To secure a challenging position in the area of Computer Architecture, Embedded Systems or Digital Design.

Skill Summary

Operating Systems : DOS, Windows 3.1/95/98/NT, UNIX, Sun Solaris
Programming Skills: C, Java, C++, Perl, Lisp, Verilog, Assembly, HTML, ASP, VB Script, SQL
Networking Skills : Socket Programming, Knowledge of TCP/IP suite
Simulation Tools : Simple Scalar, SMT Simulator, MIPS R2000 simulator

Education

Aug'00 – May'02 M.S. (Thesis) (Computer Engineering), University of Maryland, College Park
Aug'96 – May'00 B.S. (Electronics and Communication Engineering), Anna University, Chennai, India.

Coursework

Digital Computer Design, Advanced Computer Architecture, CAD for Digital Systems, Distributed Operating Systems, Embedded Systems Laboratory, High Speed Networking, Introduction to Artificial Intelligence, Digital VLSI, Advanced Micro architecture, Entrepreneurship and Startup Technologies.

Experience

Jul'02 - Present
(Dr.Yaser Yacoob)

University of Maryland Institute for Advanced Computer Studies (UMIACS) --- *Research Assistant*

- Computer Vision – Human hair modeling and recognition

Aug'00 – Jun'02
(Dr.Donald Yeung)

Systems and Computer Architecture Laboratory, University of Maryland --- *Research Assistant*

- Analyze priority scheduling and dynamic resource allocation mechanisms in multithreaded processors.
- Implement the design of zero-overhead 'transparent' helper thread schemes on SMT processor cores.
- Quantify the performance of software prefetching and evaluate the impact of instruction overhead on a high performance single threaded processor core.
- Extensive use of the 'C' language for simulator coding and benchmark hacking.

Nov'01—Jul'02

AutoSmart Inc., Chantilly, Virginia --- *Software Engineer – Smart Card Framework Development*

- Develop a Java Card based Smart Card system for the automotive retail and service industries.
- Design and develop Java based client-server architecture for real-time data transactions.
- Design Web based database transaction systems using ASP's with an Oracle back-end.

Aug '00 – Jan '01
(Dr.Yaser Yacoob)

University of Maryland Institute for Advanced Computer Studies (UMIACS) *--- Research Assistant*

- Developed a framework in Java to enable PONG (a visually interactive toy) to dynamically look for information from Internet sites and also function as a personal e-mail agent.
- Designed a novel semantic markup language to enable intelligent software agents to respond to natural language user queries by dynamically extracting the responses from web content.

Apr '00 – Jul '00

Inventa Informatics Pvt. Ltd., Chennai, India --- *Embedded Software Engineer*

- Developed 'C' based device drivers for the interaction of 89C51 micro controllers with peripheral components such as EEPROM, RTC and RF module.

Publications

- **Transparent Threads: Resource Sharing in SMT Processors for High Single-Thread Performance**. Gautham K.Dorai and Donald Yeung. *Proceedings of the 11th International. Conf. on Parallel Architectures and Compilation Techniques (PACT),* Charlottesville, VA, September 2002.
- **Compiler-Based Automatic Data Prefetching with Hardware Support**. . Seungryul Choi, Gautham K.Dorai and Donald Yeung. *Poster Session - Sixth Annual Electrical Engineering, Computing and Systems Research Review Day.* University of Maryland, March 2001.
- **Facilitating Semantic Web Search with Embedded Grammar Tags**. Gautham K.Dorai and Yaser Yacoob. *Workshop on E-Business and the Intelligent Web, IJCAI-01.* Seattle, Washington, August 2001
- **Embedded Grammar Tags – A new model for Natural Language Interaction on the Web**. Gautham K.Dorai and Yaser Yacoob. *IEEE Intelligent Systems, 17(1), Jan/Feb 2002, pages 48-53.*
- **Soujunior - A Wireless Programmable Control Unit**. *Electronics For You Magazine.* October 1999.

Graduate Projects

- Performed analysis of branch prediction schemes using the MIPS R2000 simulator.
- Studied the impact of the variance of connection setup and tear down delays in wireless TCP networks.
- Evaluated the performance benefits of out-of-order commit in Simultaneous Multithreading Processors.

Undergraduate Projects

- Designed an embedded web server on an 80386-processor board. Involved writing the TCP/IP stack using 'C' routines, native board assembly and device drivers to connect to peripheral hardware.
- Designed a wireless file transfer protocol for transferring files over an IR module, using 'C' language.

Honors

- Guindy Engineers' Best Project Award: "An Embedded Web Server", 2000
- Computer Society of India Award -- State Third Rank in the Higher Secondary Examinations, 1996
- Best Outgoing Student Award: S.B.O.A Matriculation Higher Secondary School, 1996