

Ramkumar Jayaseelan

- Objective** Seeking a challenging internship position for summer 2006
- Date of Birth** 21/06/1983
- Education**
- 2004-present Phd Computer Science
School of Computing
National University of Singapore(NUS)
CAP 4.6/5
 - 2000-2004 Anna University,
BE/Computer science and engineering,
First Class with distinction CGPA 8.65
College of engineering,
Guindy, Chennai,
India.
 - 1999-2000(HSC)
Vidya vikasini school, Coimbatore,
Score: 94%
- Publications**
- **Ramkumar Jayaseelan**, Haibin Liu, Tulika Mitra. Exploiting Forwarding to Improve Data Bandwidth of Instruction-Set Extensions, 43rd ACM/IEEE Design Automation Conference (**DAC**), July 2006
 - **Ramkumar Jayaseelan**, Tulika Mitra, Xiangfeng Li Estimating the Worst-Case Energy Consumption of Embedded Software in the 12th IEEE Real-Time and Embedded Technology and Applications Symposium (RTAS), April 2006
 - M.Nithish, **Ramkumar.J**, Ramakrishna.C, Lakshmi Priya TKS Design and Evaluation of Intermediate Retransmission and Packet Loss Detection Schemes for MPEG4 Transmission in the proceedings of the international conference on information technology coding and computing (ITCC04), Las Vegas USA
 - Ramanathan Palaniappan, **Ramkumar Jayaseelan**, Vikram Chandiramani, Vimal Kumar Selvam, "Adaptive Binomial Congestion Control Algorithm based on the Loss Rate, 2nd WSEAS International Conference on Information Security, Hardware/Software codesign and Computer Networks (ISCOCO 2003), New York, USA
 - Vikram Chandiramani, **Ramkumar Jayaseelan**, Vidya Sudhan L Nathan, Kamakshi Priya S, "A Neural Network Approach to Process Assignment in Multiprocessor Systems based on the Execution Time", IEEE Sponsored International Conference on Intelligent Sensing and Information Processing (ICISIP 2004), Chennai, INDIA
 - Vidhya Sudan L Nathan , **Ramkumar Jayaseelan** , Kamakshi Priya S "A new approach to license plate recognition" IEEE Sponsored International Conference on Intelligent Sensing and Information Processing (ICISIP 2004), Chennai, INDIA
 - Mahesh Paravin, **Ramkumar J** , Shivashankar P "Chaotic encryption and decryption using the random game algorithm" in the proceedings

of the international conference on digital aided simulation and modeling (DAMS 2003) , Coimbatore India

- **Ramkumar J**, Vidhya Sudhan L Nathan , Kamakshi Priya S “A new approach to page replacement to provide near optimal behavior by the use of Neural networks” at the sixth international conference on information technology poster session , Bhuvaneshwar India

Achievements

- Final year project in undergrad on “Design of multi-level banked register file for SMT processors and its associated register renaming algorithm” was among the **eight projects** from India selected for the final round of the **Intel Student Research Contest India**.
<http://www.intel.com/research/awards/india/2004finalists.htm>
- Scored **99.83** percentile in the **GATE 2004** exams
- Our team was ranked **12** in Asia in the **ACM international programming** contest held in Bombay
- Offered positions in **Microsoft India Development** Centre and **Verizon India** after B.E.
- Offered Research Scholarship at National University of Singapore
- Was ranked first continuously for two years in the Intra college Programming Contests in Anna University
- Published three international papers and two posters during undergraduate studies.
- Won in National level inter-college paper presentation and programming contests

Phd Research Topic

Design of Thermal Aware Systems

Currently investigating the impact of micro-architectural, operating system scheduling and compilation techniques on temperature. Objective of the research is to come up with techniques to reduce the amount of heat produced in processors at the micro-architecture level and operating system level. The role of the compiler is to analyze the programs to extract their impact on the processor temperature and supply this information to the operating system. The techniques developed must be evaluated by their overhead and the way they affect the performance.

Internships

- Worked as an intern from May-July 2006 Google Labs Bangalore
- Worked as an intern under Dr Tulika Mitra, Assistant Professor, National University of Singapore from June 2004- August 2004

Projects/Surveys

- Modified pipeline design and instruction scheduling to implement complex custom instructions on simple processors.
- Design and implementation of an algorithm to insert speculative loads for EPIC machines using the Trimaran compiler
- A sleep wake protocol to dynamically tradeoff quality of service and energy consumption in surveillance sensor networks
- A survey on cryptographic authentication systems
- Understanding the temporal power profile of SPEC benchmarks
- Implementation of a constraint based analyzer in SML
- Implementation of a data flow analyzer in SML

Under Graduation Projects(selected)

- A modified register allocation algorithm for banked register files
- Neural Networks based page replacement algorithm
- Simulation of binomial congestion control algorithm
- Implementation of Huffman encoder in VHDL
- Radio tuner using a C program

- Single key encryption based on mazes.

Courses

- Distributed Wireless Sensor Networks
- Topics in Information Security
- Design of Optimizing Compilers
- Embedded Software Design
- Hardware Software Co-Design
- Advanced Processor Architecture
- Principles of Program Analysis

Software/Tools

C,C++, SUIF, Simple Scalar, VHDL

Others

Attended the HIPEAC summer school on high performance and embedded system design in Rome from July 24-30 2005

References

- Dr Tulika Mitra
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Department of Computer Science,
School of Computing,
3, Science Drive 2,
National University of Singapore,
Singapore 117543
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