

CURRICULUM VITAE

PIRAMANAYAGAM ARUMUGA NAINAR

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WORK EXPERIENCE

Senior Software Engineer, Google Inc. November 2014 - present

- Compiler Engineer in Android LLVM Toolchains and RenderScript

Senior Software Engineer, Oracle Corporation. September 2012 – October 2014

DPA Technology Office (Performance Technologies division)

- Hadoop performance characterization on SPARC/Solaris including porting, identifying best practices for configuring Hadoop on large SMTs, and system characterization of Tera-sort and Mahout/KMeans workloads.
- VMA: Designed and implemented a tool called VMA to perform optimal resource allocation of virtual machines in NUMA systems. The tool uses Linear Programming to simultaneously optimize objectives such as load balancing and IO proximity.

Research Assistant, University of Wisconsin–Madison. 2007 – 2012

- Member of the Cooperative Bug Isolation project.
- Bug isolation in x86 binaries using statistical debugging, instrumentating binaries, and adaptive re-instrumentation.
- Enhanced CBI statistical bug isolation techniques using propositional predicates and conditional-coverage profiles.

Intern, Microsoft Research, Redmond. Summer 2007

- Worked in the Research in Software Engineering group.
- Systematic concurrency testing of Windows User Mode Drivers using CHES tool.

Teaching Assistant, University of Wisconsin–Madison. Fall 2005

Software Engineering Intern, Microsoft, Hyderabad. Summer 2004

SKILLS

Languages: C, C++, Python

Technologies: Hadoop, Oracle InDatabase MapReduce, Dyninst, DTrace

Familiar with: Java, OCaml, Scheme, Scala, Spark, Mahout, NumPy, SciPy

EDUCATION

Ph.D. in Computer Science, University of Wisconsin–Madison. 2007 – 2012

M.S. in Computer Science, University of Wisconsin–Madison. 2005 – 2007

- GPA: 3.94 / 4

Bachelor of Engineering (B.E.) in Computer Science,

College of Engineering, Guindy (Anna University). 2001 – 2005

- GPA: 9.26 / 10

PUBLICATIONS AND POSTERS

“MapReduce on Massively Multi-Core Systems” **P. Arumuga nainar**, D. Sarkar. Poster in Extremely Large Databases (XLDB) 2013, September 2013

“Applications of Static Analysis and Program Structure in Statistical Debugging,” **P. Arumuga Nainar**. PhD Thesis, August 2012

“Adaptive Bug Isolation,” **P. Arumuga Nainar** and B. Liblit. In the 32nd International Conference on Software Engineering (**ICSE 2010**). Acceptance rate: $52 / 380 = 14\%$

“Finding and Reproducing Heisenbugs in Concurrent Programs,” M. Musuvathi, S. Qadeer, T. Ball, G. Basler, **P. Arumuga Nainar**, and I. Neamtiu. In the Eighth Symposium on Operating System Design and Implementation (**OSDI 2008**). Acceptance rate: $26 / 193 = 14\%$

“Statistical Debugging Using Compound Boolean Predicates,” **P. Arumuga Nainar**, T. Chen, J. Rosin, and B. Liblit. In the 2007 International Symposium on Software Testing and Analysis (**ISSTA 2007**). Acceptance rate: $22 / 100 = 22\%$

TALKS

Oracle Open World 2013, “Hadoop for Big Data Analytics on SPARC T5 Servers”, Sep 2013

XLDB 2013, “MapReduce on Massively Multi-Core Systems”, Sep 2013.

DPA Performance Forum, Oracle, “Hadoop Architectural Overview”, Feb 2013.

The 32nd International Conference on Software Engineering (ICSE 2010), “Adaptive Bug Isolation”, May 2010.

Microsoft Research, Redmond, “Semantic Testing of Windows User Mode Drivers using CHES”, August 2007.

International Symposium on Software Testing and Analysis (ISSTA 2007), “Statistical Debugging using Compound Boolean Predicates”, July 2007.

Microsoft Research, Redmond, “Statistical Debugging using Compound Boolean Predicates”, June 2007.

2007 Paradyn/Condor Week, “Automated Adaptive Bug Isolation Using Dyninst”, May 2007.

HONORS AND AWARDS

2006 Summer Graduate Research Assistantship awarded by the Department of Computer Sciences, University of Wisconsin–Madison.

All India Rank 2 in the 2005 Graduate Aptitude Test in Engineering (GATE) for Computer Science. This exam is similar to the CS Subject GRE tests.

1999 National Talent Scholarship, awarded by the National Council of Educational Research and Training (NCERT), India. (One of 750 recipients at the national level)

PERSONAL INFORMATION

Country of Citizenship: India

US Visa Status: H1B

REFERENCES

Available upon request