Varun Khaneja

Contact Information

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About Me

A versatile, innovative developer, who works on mobile platforms, likes to read, loves to travel, and keeps trying out new products/technologies.

Areas of Interests

Cloud-based services, Mobile applications, Web browsers, GPU parallel programming, and Platform development.

Professional Experience

Adobe Systems, NOIDA, India. **June 2007 – present**

Computer Scientist

Mobile: Built Adobe Reader for *Android*, almost single-handedly for *Windows Phone 7*, and leading the effort for other platforms.
PDF Reader for Unix: Implemented *Flash Player* playback inside *Reader*; Complete incharge of the the installation experience.
Acrobat: Joint ownership of development of the legacy Multimedia playing solution.
Platform expertise: *Windows Phone 7*, *Android*, *Windows Mobile 6*, *Windows*, *Macintosh*, *Linux*, *Solaris (x86)*.

Advanced Micro Devices (AMD), Bangalore, India. **July 2006 – May 2007**

Design Engineer - II Pre-silicon functional verification

Complete ownership of functional verification of the instruction cache and the floating-point unit (FPU) of the first generation of quad-core processor family from AMD.
Joint ownership of the functional verification of the Data Cache.
Verification was performed using a variety of approaches such as directed tests, whacker environment, and coverage including FCOV.

IIT Kanpur, Kanpur, India. **Dec 2004 - July 2005 - Dec 2005**

Course Tutor Fundamentals of Computing

Delivered Java tutorials (three back-to-back terms) at the university.
Worked along with the instructor and fellow tutors in developing and adopting best techniques of imparting learning.

STMicroelectronics, NOIDA, India. **Jun 2003 - Aug 2003**

Engineering Intern Developed "Windows CE Test Support Toolkit"

Studied the Windows CE operating system and developed a "Windows CE Test Support Toolkit", a suite of applications for testing the memory usage, checking against memory leaks, and monitoring the battery usage of the hand-held devices. It could also be used for optimizing the size of the memory footprint of the operating system image, and for generating image profiling information.

Education

IIT Kanpur **July 2004 – June 2006**
Master of Technology Advisor: Dr. Mainak Chaudhuri CPI: 9.14 (on 10)

Bharati Vidyapeeth College of Engineering, Delhi, India **July 2000 – June 2004**
Bachelor of Technology Score: 79.80%

Courses Taken

Computer Architecture, Parallel Computer Architecture, Embedded Systems, VLSI Design for Parallel Architectures, Grid Computing, Computer System Security.

Honours and Awards

Nominated for the "Good Work" award multiple times by teammates, 2010.

Spot award for diligence shown in working on security issues related to Multimedia playback for Acrobat 9, 2008.

Bagged 1^{st} prize in *Coderupt*, an International Online Hacking Competition, 2006.

Certificate of being "One of the Best Presenters" in the Embedded Systems course, 2005.

Ranked 2^{nd} (99.98 percentile) in GATE examination, 2004.

Among top 0.1% scorers in Mathematics in AISSE, 1998.

Academic Projects

Masters Thesis: Selective optimizations and Evaluation of a Directory-less Protocol on Distributed Shared Memory Multiprocessors.

Distributed Shared Memory multiprocessors have been using directory based approaches to maintain the state of the cache lines at home node. This approach has a major memory access overhead, for reading the directory, in cases when the line is in the modified state. I worked on designing a protocol that circumvents this problem by broadcasting the incoming request to all nodes in the system. Broadcasting all incoming requests puts a large amount of load on the coherence controller, so techniques to reduce the average load on it were also evaluated.

Prediction of header and addresses in a packet in a Distributed Shared Memory System

The project dealt with the use of prediction algorithms for predicting the header and contents of request messages in a DSM system. This helps in reducing the effect of memory access latency and improves system performance considerably. To keep the hardware costs minimal, simple algorithms were used which needed to be finely configured. *[September - November 2004]*

A Case Study in Design of an Embedded System

The term paper focussed on a case study in design of an *Embedded Engine Control Unit* based on the specifications of an architecture of the embedded controller implemented by *Magnetti Marelli*. The term paper dealt with the issues of Hardware-Software Co-Design, which form a decisive part of the Embedded System development life-cycle. *[October - November 2004]*

Integrating hand-held wireless devices with grids

The term paper involved addressing the issues related to integration of hand-held wireless devices with Grids, pre-processing of inputs, post-processing of results, tracking the wireless device by the grid etc. given these devices are resource poor. *[March - April 2005]*

Programming Skills

C, C++, VC++, Linux shell scripting, Microsoft Silverlight, Java.
Android, Windows Mobile 6.x, Windows Phone 7, Linux (RedHat, Fedora Core, Ubuntu), Unix, Windows, DOS, Macintosh, Solaris (x86).
Familiarity with Oracle, iOS, Adobe Flex.

Extra-curricular Activities

Organized and compéred the annual dumb-charades competition, Adobe, 2009.
Finance co-ordinator of the Association of Computing Activities, IIT Kanpur, 2005-06.
Member of the Post Graduate *Counselling Team*, IIT Kanpur, 2005-2006.

Referees

Available on request.

Personal Details

Sex: Male
Marital Status: Single
Date of Birth: May 30, 1983
Languages known: English and Hindi
Passport validity: 15 September, 2013