Ajay Harikumar

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Objective

Use my diverse technical skills and business acumen to make impactful change using technology. Looking for senior positions in startups. I prefer working on Python/R and Go-lang.
Green card/authorized to work in US.

Skills

18 years Software Engineering experience including Architecture, Design, Coding/Software development, Product Ownership, Building Teams, new Project/Business proposals.

Five patents, IDF in pipeline, external and internal papers (https://scholar.google.com/citations?user=eNafY6MAAAAJ&hl=en)

Skill Matrix

Expert	**C, Systems, Runtime**	Binary translation, BIOS, Simulators, Performance analysis and Optimizations
Good	**Python**, Algorithms/Data structures, x86 assembly	Code optimizations and Computer Architecture
Previous work experience	C++, Android system and app development, R	Virtualization, EFI
Personal projects	**Go-lang,** HTML5	Web backend
Hobby	R, Python	Quantitative Analysis
Soft skills	Highly results oriented, mentoring, idea generator, diverse technical and business interests	

Education

MS in Software Systems	BITS Pilani, India.	7.4 aggr	2005-07
B.Tech in Electrical and Electronics	Kerala University, India	7.5 aggr	1992-96

Experience

Staff Software Engineer	**Intel** (2012 to present)	**Binary Translation** – Feature development and algorithms for performance improvements for various Binary Translation (BT) projects. Responsibility includes architecture, design and software development (C lang). Projects are - **App level BT** Security project for Control Flow Integrity protection against various malware attacks like ROP and Stack Pivoting on Windows. Currently used by McAfee for identification of zero-day attacks and feeding into their virus definitions. Personally responsible for 2X speedup and 50% memory reduction in product - **Andriod**: Enabling same project on Android - **Processor**: Working with Processor Architects on a hardware-software co-design project to increase IPC using BT
Platform Architect	**Intel** (2009 to 2012)	Owned System performance in Platform Architecture team for Intel tablets/phones. Performance projections (for CPU, Gfx, Memory) on Intel and competitive platforms using in-depth architectural knowledge, simulations, experiments (e.g.

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		identifying and meeting Windows 8 Metro UI performance requirements). More than 50 million tablets that I have worked on, have been sold Created SDV (Software Dev Vehicle) for graphics driver development by extending an FPGA emulator with Qemu VMM and bus functional models. Successfully rendered images using extremely complex flow between App/Driver←→VMM←→BFM←→IP(Verilog-FPGA)
Senior Research Scientist	**Intel Labs** (2005-2008)	Architecting, designing and prototyping Platform and security features for Intel platforms. Virtualization/Partitioning, OS integrity analysis etc.
Senior Software Engineer	**Intel** (2002-2005)	Owned **BIOS** (UEFI – C and ASM) for many Intel Server Platform generations including development, project management and coordination with multi-site teams
Senior Software Engineer	**Virtio** (Synopsis) (2000-2001)	Instruction Set **Simulators** (C/C++ language) for a startup with radical idea of creating platforms and running simulations in browsers
Senior Software Engineer	**Philips** (1999-2000)	Developed bit/cycle accurate, behavioral and functional simulation models for Processors including MIPS and DSP (C/C++ and Linux)
Software Engineer	**Accord** (1997-1999)	HP: **Automotive software** (Ford and Mazda cars) (C/ASM) Defense: Light Combat Aircraft **Avionics** (ADA and i386)

Links

LinkedIn: http://linkedin.com/in/ajayharikumar
Web: http://ajayharikumar.com
Github: https://github.com/ajayhk

References

Available on request

Other activities

- Reviewer and contributor to Intel's biggest Tech conf (**DTTC**), reviewer and organizer for **HIPC**
- **5 patents, one external paper (VDAT 2000) and four internal papers**
- Industry talk at HiPC 2010
- **Conceptualized and conducted site wide Innovation Contest**. Over 170 teams participated with winner getting funding for prototyping and project
- **Expert at "Meet the Experts" at Intel Developer Forum 2005**
- Volunteer at Sacred Hearts and other charitable organizations
- Started site Gaming Chapter and game room with high-end gaming PCs sparking site-wide interest in PC gaming
- **Quantitative Analysis – Using R and Python,** developed stock trading algorithms; **ranked 17th best performance** among 300 entries