

# SAMUEL JACOB

## (platform-kernel developer)

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Bangalore

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### OBJECTIVE:

Obtain a challenging development position in the following domains - virtualization, file systems, storage, platform bring-up or networking.

### SKILLS SUMMARY:

- In-depth knowledge in **Operating System Design and Implementation**.
- Worked on various kernels **FreeBSD, Tru64, Juniper uKernel and HP-UX**
- Worked on various processor architectures (**32bit** and **64bit**) (X86, Alpha, Itanium and PowerPC)
- Exposure to **Windows Driver Model and Linux kernel**.
- Self driven, with a strong sense of initiative and ownership.

### ACHIEVEMENTS:

- **Designed and created an Operating System from scratch – [Ace OS](http://apps.sourceforge.net/mediawiki/aceos/)**  
<http://apps.sourceforge.net/mediawiki/aceos/>
- Patents being filed
  - A method to **detect kernel memory** corruption without space overhead
  - A method to **trace kernel functions(call graph)** without performance overhead

### PROFICIENCY:

<b>Languages/ Scripting</b>	Assembly(nasm), C(gcc), C++ and VC++ Python
<b>Hardware Architectures</b>	x86, PowerPC, Arm, IA64 and Alpha RISC, CISC and EPIC SMP, AMP and NUMA
<b>Protocols</b>	PCIe, USB, I2C
<b>Debuggers / Emulators</b>	GDB, BDI, JTAG, DBX, Crash and P4 Vmware, Qemu and Bochs

## PROFESSIONAL EXPERIENCE:

### MEMBER OF TECHNICAL STAFF – IV (July 2009 - Present)

#### Juniper Networks, Bangalore (<http://www.juniper.net/>)

- Involved in bring up activities of new PowerPC based cell site router.
- Designed a communication mechanism between FPGA and host through PCIe shared memory.
- Designed and developed FreeBSD network driver (1G) for virtualization capable [HEA network card](#).
- Worked on Juniper network operating system's ([JUNOS](#)) IPC infrastructure.
- Developed kernel development tools(kernel code coverage, back trace, memory corruption)

### SYSTEM SOFTWARE ENGINEER (June 2006 – July 2009)

#### Hewlett Packard, Bangalore ([www.hp.com](http://www.hp.com))

- Maintained [Tru64 kernel](#) Virtual Memory, Scheduler and Process Management subsystem
- Worked on virtual memory and 32bit emulator kernel portion of [HPUX](#)
- Fixed critical bugs in various modules(virtual memory, scheduler, process management..) in
- Prototyped a crash dump analyzer tool
- Created a "[Alpha](#)" disassembler to use in the crash dump analyzer tool

### TEAM LEAD (June 2004 – June 2006)

#### Photon, Chennai (<http://www.photon.in/>)

- Designed and created [GPS](#) applications for [Windows 2003 mobile](#) platforms.
- Created an application which integrates two data from two system into a single database.
- Designed a dynamic reporting tool using Microsoft Reporting Services.

### FREELANCER (May 1999 – May 2004)

- Created GPS based applications.
- Developed Visual Basic applications and custom installers, report generators.

## EDUCATION

- **Master of Computer Applications**  
Alagappa University, Karaikudi, India.