Curriculum Vitae

JUN SUN, PH.D.

40521 Dolores Pl., Fremont, CA 94539
Mobile: +1-510-299-1912, Email: jsun@junsun.net

EXPERTISE & INTERESTS

- Internet of Things (embedded,mobile and cloud)
- Mobile platforms, applications and mobile Internet services
- Operating systems and security

EDUCATION

- **Ph.D., Computer Science**, University of Illinois, Urbana-Champaign, 1996.
  DISSERTATION: *Fixed-Priority End-to-End Scheduling in Distributed Real-Time Systems*
  GPA: 4.96/5.0
- **B.S., Computer Science,** Shanghai Jiao Tong University, 1989
  DISSERTATION: *Computer Assisted UI Generation for Electric Power Control Systems*
  GPA: 3.55/4.0

INDUSTRIAL EXPERIENCE

Sr. Directory of Strategic Marketing, Director of Software Architecture – UNISOC (formerly known as Spreadtrum Communications), San Jose, CA. 05/16 – present

- As Sr. Director of Strategic Marketing, I oversee partnership with strategic US partners, including Google, Facebook and Amazon. Starting this role from April 2017, I have successfully initiated and launched many high-profile programs, including GMS Express Program and Android 3PL certification lab. In this capacity I have worked extensively with internal legal and business units and have successfully signed more than 10 contracts and agreements.
- As Director of Software Architecture I have assembled and led a team that had successfully completed a very challenging ARM 32bit to 64bit binary translator project. I also led a mobile AI/ML initiative that uses innovative CPU-affined neural network acceleration architecture for Android NNAPI framework.

Product Manager, Chrome OS – Google Inc, Mountain View, CA. 05/14 – 07/15

- Embarked on an ambitious mission to bring Chrome OS to Internet of Things (IoT) devices, such as Smart Speakers.
- Engaged and managed SoC chipset partners (Marvell, Broadcom, IMG, MediaTek).
- Worked with engineering team to define features, requirements, schedules and roadmap.

Director, Mobile Software –Acer R&D Center, Sunnyvale,CA, 05/13 – 03/14

- Built and led an engineering team to develop large screen, Android-based, multimedia home appliances.
- Closely participated in product definition and market positioning.
- Researched on and defined technologies for key features (always-on voice recognition, proximity-based sharing, web browser enhancement, etc)

CTO & Co-Founder –Netspectrum Inc., Santa Clara, CA, 08/08 – 02/13

- Grew the company from zero to peak size of 20 people. Signed 10 contracts with 4 customers with over $3 million in revenue. Established an R&D center in Beijing, China
- Led the team to deliver the world's first Linux based SmartSIM product, SmartSIM-enabled Android handset, management server, and application store.
- Developed mobile dialing app (Jinggling) and mobile payment solution (Flash2Pay) with over 75,000 users combined. Jinggling was sold to an UK company.
- Responsible for hiring, directing and managing the whole team.
- Responsible for architecting the systems, with hands-on coding throughout the systems (multi-stage loader, Linux kernel, various drivers, virtual machine/hypervisor, smartcard web server, streaming server, HTML/javascript apps, Android apps, VOIP, payment processing, PKI security, PHP/Yii/MySQL/Apache, JavaScript/HTML5, etc).
- First author of 3 patents (1 granted) and 2 preliminary patents.

Mobile Platform Architect – InnoPath Software Inc, Sunnyvale, CA, 01/07 – 08/08

- Led a team of six engineers to develop an OMA DM based mobile device management client for emerging smartphones (Android, iPhone and Windows Mobile). Product features included firmware update, application management, remote lock&wipe, configuration and others.

Mobile OS Manager – DoCoMo USA Labs, Palo Alto, CA, 07/04 – 01/07

- Managed teams with sizes varying from one to twelve, typically a mix of researchers (Ph.D.'s) and open source developers.
- Team projects: 1) OS switching that enables dual OS (Linux and WinCE) running on the same phone; 2) virtualization with ARM TrustZone; 3) VOIP testbed with Asterisk/Linphone.
- Evaluated various virtual machine technologies, including OSWare, Trango, L4/Iguana/Wombat, Xen and VMWare. Designed and implemented OS switching and TrustZone virtualization.
- Primary author of Open Secure Terminal Initiative, a collaboration project between Intel and DoCoMo.
- Built a complete open source GSM phone prototype using Linux, uclibc, busybox, Qtopia, GPE, OpenEmbedded running on Intel Zoar hardware.
- First author of 3 patent filings, all of which are granted..

Kernel Architect/Project Lead – MontaVista Software, Sunnyvale, CA, 01/00 – 07/04

- Coordinated and managed off-shore teams in Moscow and Beijing. Estimated effort and defined work scope for over 20 projects.
- Interacted with Linux open source communities. One of the gatekeepers of Linux/MIPS tree. Author of Linux/MIPS Porting Guide.
- Significant contributions to 64bit MIPS kernel, 2.6 MIPS kernel, NPTL (Native Posix Thread Library), POSIX high resolution timers, KGDB.
- Initiated preemptible kernel work on Linux 2.2.12.
- Led Linux/MIPS group. Added board abstraction layer (system time, PCI, RTC). Ported Linux to various boards/chips from NEC, Broadcom (first 32bit SMP), PMC-Sierra, QED, MIPS Technology, Intrinsity, Toshiba, NEC VR-series, and more. Wrote various drivers (Ethernet, sound, MTD, serial, RTC, etc).

Senior/Staff Engineer –Sony USA Labs, San Jose, CA, 06/98 – 12/99

- Developed Sony's OS, Aperios, for HAVi(Home Audio/Video Inter-operability), set-top box, digital TV, IEEE1394, and robot dog (Aibo).
- Wrote keyboard/mouse drivers, PCI bus controller, C++ exception handling, etc. Ported to various CPU's and boards.

- Created an OS abstraction layer for middleware and implemented it on VxWorks/Tornado.

Design Engineer – Geoworks, Berkeley, CA, 08/96 – 06/98

- Designed and implemented the GEOS-SC operating system, world first 32bit OS for smart mobile phones. Specifically, I implemented the database, DLL, and dynamic application loading with >25,000 lines of production code in C/C++.
- Participated in full development cycle of Toshiba Genio, the first 32-bit smartphone in the world.
- Invented dual-kernel architecture with ITRON-based hard real-time kernel underneath the non-real-time GEOS kernel.

ACADEMIC/RESEARCH EXPERIENCE

Adjunct Professor –San Jose State University, San Jose, CA, 09/2018 – present.

- Teach *Computer Architecture and Organizations.*

Adjunct Professor -University of California, Santa Cruz, CA, 01/2016 – 09/2016.

- Taught *Internet of Things: Device, Communication & Cloud.*

Adjunct Professor –Santa Clara University, Santa Clara, CA, 01/2016 – 04/2017.

- Teach *Mobile Application Programming (Android).*

Adjunct Professor - Northwestern Polytechnic University, Fremont, CA, 1999-2000.

- Taught*UNIX Operating Systems.*

SELECTED PUBLICATIONS

- J. Sun, D. Zhou, S. Longerbeam. Supporting Multiple OSes with OS switching. Published in*Proceedings of 2007 USENIX Annual Technical Conference*. (PDF, DOC)
- J. Sun, Y. Wang, M. Kallahalla, N. Islam. HAIL: A Language for Easy and Correct Device Access. In *Proceedings of ACM Conference on Embedded Software*, pages 1-9, Jersey City, NJ, Sep 2005. (PDF).
- Z. Deng, J. W.-S. Liu, and J. Sun. A scheme for scheduling hard real-time applications in open system environment. In *Proceedings of the Ninth Euromicro Workshop on Real-Time Systems*, pages 191-199, Toledo, Spain, June 1997. IEEE. (PDF, PostScript, 9 pages)
- Jun Sun, Mark K. Gardner, and Jane W. S. Liu. Bounding completion times of jobs with arbitrary release times, variable execution times, and resource sharing. *IEEE Transactions on Software Engineering*, 23(10):603-615, October 1997. (PDF, PostScript, 14 pages)
- Jun Sun. *Fixed-Priority End-to-End Scheduling in Distributed Real-Time Systems*. PhD thesis, University of Illinois at Urbana-Champaign, 1997. Available as Technical Report UIUCDCS-R-97-1973. (PDF, PostScript, 183 pages)
- Jun Sun and Jane W. S. Liu. Bounding completion times of jobs with arbitrary release times and variable execution times. In *Proceedings, Real-Time Systems Symposium*, pages 2-12, Washington, D. C., December 1996. IEEE. (PDF, PostScript, 11 pages)
- J. W. S. Liu, C. L. Liu, Z. Deng, T. S. Tia, J. Sun, M. Storch, D. Hull, J. L. Redondo, R. Bettati, and A. Silberman. PERTS: A prototyping environment for real-time systems.*International Journal of Software Engineering and Knowledge Engineering*, 6(2):161-177,

1996. (PDF, PostScript, 18 pages)

- Jun Sun and Jane Liu. Synchronization protocols in distributed real-time systems. Submitted to *IEEE Transactions on Parallel and Distributed Computing*. (PDF, PostScript, 28 pages)
- Jun Sun and Jane Liu. Bounding the end-to-end response times of tasks in a distributed real-time system using the direct synchronization protocol. Technical Report UIUCDCS-R-96-1949, Department of Computer Science, University of Illinois at Urbana-Champaign, June 1996. (PDF, PostScript, 16 pages)
- Jun Sun and Jane Liu. Synchronization protocols in distributed real-time systems. In *The 16th International Conference on Distributed Computing Systems*, Hong Kong, May 1996. (PDF, PostScript, 8 pages)
- T.-S. Tia, Z. Deng, M. Shankar, M. Storch, J. Sun, L.-C. Wu, and J. W.-S. Liu. Probabilistic performance guarantee for real-time tasks with varying computation times. In *Proceedings, Real-Time Technology and Applications Symposium*, pages 164-173, Chicago, Illinois, May 1995. IEEE. (PDF, PostScript, 12 pages)
- Jun Sun and Jane W. S. Liu. Bounding the end-to-end response time in multiprocessor real-time systems. In *Proceeding of Workshop on Parallel and Distributed Real-Time Systems*, pages 91-98, Santa Barbara, California, April 1995. (PDF, PostScript, 8 pages)
- Too-Seng Tia, Jane W.-S. Liu, Jun Sun, and Rhan Ha. A linear-time optimal acceptance test for scheduling of hard real-time tasks. *Technical Report, Dept. of Computer Science, University of Illinois,* 1994. (PDF, PostScript, 17 pages)
- Jun Sun, Riccardo Bettati, and Jane W.-S. Liu. An end-to-end approach to schedule tasks with shared resources in multiprocessor systems. In *Proceedings of the 11th IEEE Workshop on Real-Time Operating Systems and Software*, Seattle, Washington, May 1994. (PDF, PostScript, 5 pages)

PATENTS

- J. Sun, D. Zhou. Secure and Authenticated Transactions with Mobile Devices. *US pantent 13/868,844 pending*, Apr 2013. (Google Patent)
- J. Sun, S. Longerbeam. System and Methods for Migrating Independently Executing Program into and Out of an Operating System *U.S. Patent No. 8,397,229 (App No. 12/489,582)*, filed in Jun 2009, issued in Mar 2013. (Google Patent)
- J. Sun, D. Zhou, S. Longerbeam. System and Methods for Efficient and Cooperative Operative System Switching *US patent no. 7,877,592*, filed in Oct 2007, issued in Jan 2011. (Google Patent)
- J. Sun, D. Zhou. Secure operating system switching *US patent no. 7,950,020*, filed in Mar 2006, issued in May 2011. (Google Patent)

AWARDS

- **Best Paper Award** in *The 16th International Conference on Distributed Computing Systems*, Hong Kong, May 1996.Synchronization protocols in distributed real-time systems, Jun Sun &

Jane Liu

OTHER ACTIVITIES

- Reviewer for book *See MIPS Run Linux, Second Edition* by Dominic Sweetman, 2007, published by Elsevier Inc.
- Creator of two open source projects : xcvs, ebase
- Hobbies: hiking, skiing, travel, jazz, golf, tennis, wine

REFERENCES

- My publication list at http://junsun.net/publications/index.html
- My random open source noises with googling "Jun Sun jsun Linux"
- My old Linux work at http://junsun.net/linux
- Personal references available upon requests