Paul Grandperrin

software & system engineer

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After three successful years of work as an SRE engineer, I decided to look for new challenges outside of my comfort zone and new opportunities. I went on a journey backpacking around the world and through many cultures to get a deeper perspective on my motivations and objectives. I also used that time to grow new skills in deep learning and low-level database programming.

I now feel more than ever motivated to find a new job where I could use my SRE and software development experience and my new machine learning skills.

Skills

I'm always looking forward to mastering new concepts, improve them, as well as designing innovative systems that make use of them.
My main interests are: high performance software development, distributed systems, databases architectures, virtualization, security, operating systems and more recently A.I. and deep learning.

Please see the annexe for more details.

Professional experiences

2013 - 2016
3 years
SRE Engineer
Paris, France

French Ministry of Defense – Big data and search engine SRE team
Projects under NDA.
Keywords : Elasticsearch, Titan (distributed graph database), Puppet, knowledge representation: RDF/OWL, cluster-wide performance tracing with perf/sysdig + ELK & framegraphs, job optimization using DFAs, hardware and system tuning, Java, Ruby, high performance Rust
Reference : under NDA but maybe a phone call can be set up

2013
6 Months
R&D Intern
Paris, France

French Ministry of Defense – Big data and search engine SRE team
Projects under NDA.
Keywords : Elasticsearch, HBase, Hadoop, Sandboxing (JVM, Seccomp..), Java, Ruby, C
Reference : under NDA but maybe a phone call can be set up

2011 – 2012
6 Months
R&D Intern
Paris, France

Alter Way Hosting - IT hosting and outsourcing company
Development :
• Extend the OpenNebula open-source project to be able to manage CPU,memory and storage hotplugging and write all the needed drivers to work with Xen, KVM and iSCSI (NetApp).
• Partly rearchitecture the core of OpenNebula to be able to manage a pool of heterogenous storage backends.
Keywords : Cloud Computing, Virtualization, OpenNebula, Xen, KVM, OpenVZ, iSCSI, NFS, Linux, FreeBSD, C++, Ruby, Clustered file systems, FreeBSD, ZFS
Reference : Kevin Mazière kevin.maziere@alterway.fr

2010 **3,5 Months**
R&D Intern
Grenoble, France

Sogeti High Tech - Engineering and Technology Consulting Service company
Keywords : Java/J2EE, REST, JQuery, ExtJS

Education

2010 – 2013
Compiègne, France

Diplôme d'Ingénieur en génie informatique, filière SRI
Université de Technologie de Compiègne - UTC

U.S. equivalent

Master's degree in computer engineering
specialized in computer systems and networks

Annexe: details on computer science skills

This section does not contain all the technologies and skills I got interested in and practiced but give a quick idea of my computer science culture and interests.

I'm a strong self-learner, always eager to understand and master new concepts and technologies. I'm passionate about designing elegant solutions to highly complex problems.

System & Network administration

Operating System	**GNU/Linux Debian, Ubuntu**, Centos, *FreeBSD*
Virtualization	Harware-Level : **Xen, KVM** OS-Level : **systemd-nspan**, *docker*
Tool / Daemon	**Unix CmdLine, Git, Vim, System D**, Latex...
Database & Search	**Elasticsearch, Hadoop/Hbase**, **Titan**, Cockroachdb, *SQL,* Lucene
Storage	FS : **ZFS, BTRFS**, Ceph Block-Level : iSCSI
Networking	**IP$_{v4/6}$, TCP/UDP, Ethernet,** *BGP, DNS...*
Monitoring	**ELK, sysdig,** perf, dtrace, flamegraphs
Theoretical knowledge	OS architecture, modern CPU & GPU architectures, memory management, routing Halfway through the book: **Site Reliability Engineering**: How Google Runs Production Systems

Software development

Low Level	**C11**, X86_64 (incl. SIMD instructions), *68K, WHDL*
High Level	**Rust, Ruby,** C++11, Java 7, ES6, Python, Bash, *Haskell*
Web	HTML/CSS, ES6, WebAssembly, *WebGL2*
API / Framework	OpenGL (mainly 3+ and ES 2.0), *Vulkan, OpenCL, LLVM, Qt4*
System / Network	**IP$_{v4/6}$ socket, Linux API,** *LKM*
Theoretical knowledge	**optimization techniques, distributed algorithms**, NFA/DFA, compilers

Artificial Intelligence

Programming	Tensorflow, Numpy, Prolog (logic programming), Lisp, SPARQL, Gremlin
Knowledge representation	Semantic networks & ontologies : OWL, RDFS, RDF ... *Expert System*
Theoretical knowledge	**Neural Networks:** course by Geoffrey Hinton from **Coursera** in 2013 **Deep Learning:** course by Andrew Ng from **Coursera** & deeplearning.ai • Neural Networks and Deep Learning • Improving Deep Neural Networks: Hyperparameter tuning, Regularization and Optimization • Structuring Machine Learning Projects • Convolutional Neural Networks • Sequence Models (in progress) Genetic algorithms, Ontologies, Inference

Security

Attack	**Fuzzing, Stack overflow**, ROP, ARP poisoning, DNS spoofing, SQL injection, *XSS* ...
Defence	**Sandboxing** (linux' chroot,namespaces/seccomp/cgroups), Firewalling, VPN, SSH, SSL, PGP
Theoretical knowledge	**System & compilation hardening**, Cryptography

Annexe: my professional heroes

Having heroes is important and it gives an idea of what my professional ambitions are.

Alan **Kay**	Smalltalk, OOP, his speeches
Alan **Turing**	Turing machines, cryptanalysis of Enigma
Andrew **Ng**	Coursera, Google Brain, Deep Learning, his speeches
Ben **Treynor**	Defined and documented SRE
Bjarne **Stroustrup**	C++, his technical blog and speeches
Brad **Spengler**	GRSecurity, PAX
Brendan **Gregg**	Solaris, Dtrace, Flamegraphs, his blog
Brian **Kernighan**	Unix, C
Bruce **Schneier**	His blog, cryptographic algorithms
Bryan **Cantrill**	Solaris, Dtrace, Joyent, Triton, his technical blog and speeches
Chris **Lattner**	LLVM, Clang, Swift
Dan **Luu**	Google's TPU, his technical blog
Dennis **Ritchie**	C, Unix, Plan 9
Donald **Knuth**	Tex, The art of computer programming
Fabrice **Bellard**	QEMU, FFmpeg
Fei-Fei **Li**	ImageNet
Geoffrey **Hinton**	Backprop in deep nets, Restricted Boltzmann Machines
George **Hotz**	Security research, Google Project Zero
Ian **Goodfellow**	GAN
Jeff **Bonwick**	ZFS
Jeff **Dean**	Google Brain, Tensorflow, Spanner, BigTable, Mapreduce, LevelDB
John **Carmack**	graphic engines, VR, his technical blog and speeches
Ken **Thompson**	Unix, Plan 9, UTF-8, Go
Larry **Page**	Page Rank, Google, Alphabet
Lennart **Poettering**	SystemD, Pulseaudio, Zeroconf, his technical blog and speeches
Linus **Torwalds**	Linux, Git
Matias **Duarte**	Material Design
Michael **Abrash**	graphic engines, VR, his technical blog
Niko **Matsakis**	Rust, his technical blog and speeches
Noam **Chompsky**	Chomsky hierarchy
Paul **Graham**	Hacker News, Ycombinator, his blog
Richard **Stallman**	GCC, GNU, GPL
Rob **Pike**	Plan 9, UTF-8, Go, his technical blog and speeches
Sam **Altman**	OpenAI, his speeches
Thaddeus **Grugq**	His blog on security
Theo de **Raadt**	OpenBSD, OpenSSH
Tim **Berners-Lee**	WWW
Yann **Lecun**	Convolution Nets