Damien Michael Carver

Personal Data

Nationality and Date of Birth:	Mauritian | 22 May 1991
Address:	38 Rue Yves Le Coz 78000 Versailles, France
Phone:	+33 6 73 14 99 89
email:	carverdamien@gmail.com

Publication

Oct 2019	Fork/Wait and Multicore Frequency Scaling: a Generational Clash in 10th Workshop on Programming Languages and Operating Systems (PLOS 19)
Sep 2019	Highlighting the Container Memory Consolidation Problems in Linux in 18th IEEE International Symposium on Network Computing and Applications (NCA 19)
Oct 2017	ACDC: advanced consolidation for dynamic containers in 16th IEEE International Symposium on Network Computing and Applications (NCA 17)

Teaching

Dec 2017	Container Virtualization	12 Hours, 30 students, Master 2nd year, Sorbonne

Work Experience

Feb 2019 Feb 2020	Research Engineer at LIP6, Paris Collaboration with Oracle Labs. Developed a visualizing tool to profile scheduling events collected in the Linux kernel through a custom ring buffer.
Apr 2015 Feb 2019	PhD Student at Magency Digital, Paris CIFRE sponsorship with ANRT
Dec 2014 Apr 2015	Software Engineer at Magency Digital, Paris Improved infrastructure utilization with Container Virtualization.
Feb 2016 Jun 2016	Intership Supervisor Assistant Fighting Memory Fragmentation caused by Virtualization using Linux refault distance.
Apr 2014 Aug 2014	Intern at TOTAL E&P R&T, Houston Prototyped an I/O scheduling algorithm using *Graph of Tasks Programming Models* and contributed to software development.

Education

Apr 2015 May 2019	Ph.D. in Computer Science, LIP6 INRIA, Sorbonne University, Paris OS Level Virtualization improves resource utilization but complicates memory consolidation. My work aimed at detecting memory activities to prevent consolidation errors.
Sep 2012 Aug 2014	M.S. in Computer Science, Sorbonne University, Paris Major: *Distributed Systems and Applications* | Good Grade

Languages

English: Fluent, CLES B2 French: Mother tongue

Record of technical skills and tools

During my Postdoctoral Position

Python	`SchedDisplay`, the visualizing part of the profiler, uses the following libraries `numpy`, `pandas`, `dask`, `bokeh`, `datashader`. https://github.com/carverdamien/scheddisplay
Kernel Development in C	`SchedLog`, the recording part of the profiler, collects kernel scheduling events with a memory footprint smaller than that of `perf`. https://github.com/carverdamien/schedlog
phoronix, nas	Benchmark suites extensively used to automate the test of our kernel scheduling policies. https://github.com/carverdamien/recordschedlog

During my Ph.D.

Kernel Development in C	I studied and mofidied pieces of Linux kernel memory management which include the `mm/memcontrol.c` and `mm/vmscan.c` files. https://github.com/carverdamien/linux
Docker	I used Docker as the container engine for my experiments. At Magency Digital, I improved infrastructure utilization thanks to Docker. At UPMC, I wrote a short series of exercise on Docker as part of a course on Container Virtualization. https://github.com/carverdamien/tuto-docker.
Qemu	I used Qemu for kernel testing and debugging.
Python	I used python to process and visualize the data generated by experiments (`numpy`, `pandas`, `pyplot` and `seaborn`).
sysbench, memtier, filebench	I extensively used these benchmarking tools to evaluate my work. I fixed and modified some of them to suite my needs.
influxdb, grafana	I used these tools to record and visualize the data of my experiments because live feedbacks helped me fine tune my experiments faster.

During my M.S.

MPI, OpenMP, CUDA, Hadoop	are programming paradigms that I studied during my master. I love how convenient it is to express and exploit parallelism with them.
C++, Java, Objective-C, Fortran	are languages that I encountered during my master. I prototyped a parallel and concurrent SAT solver in C++ during my first intership. I had many course projects in Java and Objective-C. My software development experience at TOTAL E&P R&T was in Fortran.