Damien Michael Carver

As PhD student in C.S., I study Operating System Level Virtualization as a means of improving resource utilization. I have shown that the Linux kernel cannot consolidate the memory of inactive containers without disturbing the services of active containers. My kernel patches aim at detecting memory activities to prevent consolidation errors.

Personal Data

Nationality and Date of Birth:	Mauritian | 22 May 1991
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Publication

Oct 2019	Fork/Wait and Multicore Frequency Scaling: a Generational Clash in Proceedings of the 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, UPMC

Work Experience

February 2019 Currently	Research Engineer at LIP6, Paris Collaboration with Oracle Labs
April 2015 February 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

April 2015 Currently	PhD Student at LIP6 INRIA, Paris Improving the memory consolidation of the Linux kernel cgroup feature.
Sep 2012 Aug 2014	M.S. in Computer Science, **University of Pierre and Marie Currie**, Paris Major: *Distributed Systems and Applications* | Good Grade

Languages

English: Fluent, CLES B2 French: Mother tongue

Technical skills and tools enhanced during my PhD

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.

Skills and tools previously acquired

MPI, OpenMP, CUDA, Hadoop	are programming paradigms that I studied during my master. I love how easy 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.

Interests and Activities

Rollerblade, Ice Skating, Skateboard, Video Gaming.