# Grégory Vaumourin

Associated Researcher in Computer Architecture at Uppsala University (Sweden)

## Topic of Research

* Emerging non-volatile memory technologies
* Memory systems optimizations including cache designs, data locality and coherence optimizations
* Compilation analysis and data locality optimization
* Computer-system architecture modeling and simulation

## Education

2017-2019

**Associated Researcher** in the Uppsala Architecture Research Team ([UART](https://www.it.uu.se/research/group/uart)), Uppsala University (Sweden)  
***Description:*** Analyzing the opportunity of the new non-volatile memories technologies (NVM) for cache-based memory systems both in hardware and software point of views with Pr. Black-Schaffer and Pr. Jimborean.

2013-2016

**PhD Degree in Electrical Engineering** from the University of Bordeaux (France).  
***Description:*** Hardware/Software co-design for data locality and coherence optimization in memory system for energy efficiency  
Thesis done under the supervision Pr. [Denis Barthou](http://www.labri.fr/perso/barthou/) and Thomas Dombek at [CEA LIST](http://www-list.cea.fr/en/) and [INRIA Bordeaux](https://www.inria.fr/equipes/storm) and defended the 4th October 2016. Details avalaible [here](https://www.theses.fr/2016BORD0173)  
***Tools:*** [Gem5 simulator](http://www.gem5.org/Main_Page), [McPAT](http://www.hpl.hp.com/research/mcpat/), [Pintools](https://software.intel.com/en-us/articles/pin-a-dynamic-binary-instrumentation-tool), [GCC](https://gcc.gnu.org/)

2013

**6 months Internship** at CEA-LETI Grenoble (France)  
***Description:*** Participation in the national research project [GRECO](http://greco.irisa.fr/) (GReen wireless Communicating Object) targetting low-power communicating networks. Developpement in the [WSNet simulator](http://wsnet.gforge.inria.fr/) for an industrial use-case simulation of an energy harvesting wireless sensor network (EH-WSN)

2008-2013

**Master degree** in Computer Engineering at National Institute of Applied Science (INSA) – Rennes (France)

## Scientific Publications

2018

**DB-AMB: Dataset-Based Allocation, Migration, and Bypassing in hybrid**  
**non-volatile/SRAM caches**  
Vaumourin G., Jimborean A. and Black-Schaffer D.  
*Under Review at IEEE Transaction on Computers* [pre-print](https://github.com/gvaumour/gvaumour.github.io/blob/master/tc.pdf)

2017

**Dedicated read-only/read-write cache design for data locality and coherence optimization**  
Vaumourin G., Dombek T., Guerre A., Barthou D.  
*Technical Report* [print](https://github.com/gvaumour/gvaumour.github.io/blob/master/report.pdf)

2016

**Specific Read-only Data Management for Memory System Optimization**   
Vaumourin G., Dombek T., Guerre A., Barthou D.  
*The 24th Euromicro International Conference on Parallel, Distributed and Network-Based Processing (PDP’16)*

2015

**Co-simulating complex energy harvesting WSN applications: an in-tunnel wind powered monitoring example**   
Le Quang V., Didioui A., Vaumourin G., Bernier C., Broekaert F., Fritsch A.  
*International Journal of Sensor Networks (IJSNet)*

2014

**Specific read only data management for memory hierarchy optimization**   
Vaumourin G., Dombek T., Guerre A., Barthou D.  
*EWiLi’14, The 4th Embedded Operating Systems Workshop* [[pdf](https://hal.archives-ouvertes.fr/hal-01090218/document)]

## Teaching and organization activities

* **2018**: Co-Supervision with David Black-Schaffer of a PhD Student. Project on analyzing SPEC2017 benchmarks memory behavior
* **2018**: Sub-Reviewer of the International European Conference on Parallel and Distributed Computing Conference ([EuroPar’18](https://europar2018.org/))
* **2017**: Co-Organizer of the 10th edition of the **Scandinavian Multi-Core Workshop**: [MCC workshop](http://www.it.uu.se/research/upmarc/events/MCC2017)
* **2017**: Member of the ACM’s Women in Computing [Uppsala Chapter](https://uu.acm.org/). Organization of the [Ada Lovelace Celebration](http://adalovelace-celebration.acm.org/)
* **2016**: Teacher Assistant for Embbeded system and Hardware Programmation at IUT de Cachan (France) for 1 year

[gregory.vaumourin@gmail.com](mailto:gregory.vaumourin@gmail.com) • [GitHub](https://github.com/gvaumour/) • [Linkedin](https://fr.linkedin.com/in/grégory-vaumourin-597a7397)