

Louis Ledoux

Curriculum Vitae

Barcelona, 08014
Spain

* 26 February 1995

+33 7 70 49 11 98

i.fledoux@gmail.com

binaryman.github.io

in ledoux-louis

@L0u1s73doux

Bynaryman

0009-0006-3643-2157

JWB1qG8AAAAJ



“Post Hoc Ergo Propter Hoc”

Research Interests

Computer Architecture	Floating-Point Unit, Systolic Arrays, GPUs, FPGAs
Computer Arithmetic	Number Representations, Application-Specific circuits, FloPoCo, Posit & IEEE754, Kulisch Accumulator, accuracy and energy budgeting
High Performance Computing	BLAS, Dense Matrix-Matrix Multiplications, Heterogeneous Workloads, Numerical Analysis, Supercomputing

Education

2018	PhD Student , <i>Universitat Politècnica de Catalunya (UPC)</i> , Barcelona Completing the PhD in Computer Arithmetic <ul style="list-style-type: none">dddDDD
2015 2018	Engineering School , <i>ESIR</i> , Université de Rennes Three years to obtain the engineer diploma certified by the CTI (Comité des Titres d'Ingénieurs) and a Master (Magister) in computer sciences <ul style="list-style-type: none">dddDDD
2013 2015	Classe Préparatoire , <i>CUPGE ESIR</i> , Université de Rennes <ul style="list-style-type: none">6/23 first year7/22 second year

Experience

2018	Researcher , <i>Barcelona Supercomputing Center (BSC)</i> , Barcelona researching.. <ul style="list-style-type: none">Keywords: FPGA, Arith, ASIC
2017 2018	FPGA as a Service Engineer , <i>b\com</i> , Rennes <ul style="list-style-type: none">Coop student known as professionalization contract in French for my last study's year. One year of R&D about Acceleration on FPGA on the cloud.Keywords: SDAccel, OpenCL, Xilinx FPGA (ultrascale vu9p), VHDL, SystemVerilog, AWS F1 instances, linux driver, linux kernel, PCIe, C++1x, C, DMA, AaaS (Acceleration as a Service).

July 2017

Back End Developer, WaryMe, Rennes

Summer Internship...

- Development of all the back end of a people security application.
- **Keywords:** NodeJS, sqlite3, git, c++, C, Angular, TypeScript, https, let's encrypt, pm2, nginx, AWS, jenkins.

July 2016

Back End Developer, ASKIA, Paris 10ème

Summer Internship...

- Development of a CLI tool which allows automated publication of surveys on well known platforms like Github or Zendesk.
- **Keywords:** NodeJS, http, api rest, git, test driven development, asynchronous programming, jasmine framework, mocks.

July 2014

Electronics Technician, Radio Electronique Rennaise (R.E.R), Rennes

Summer Internship...

-
- **Keywords:**

Peer-reviewed Conference Papers

- [LC23a] **L. Ledoux** and M. Casas, "An Open-Source Framework for Efficient Numerically-Tailored Computations," in *2023 33rd International Conference on Field-Programmable Logic and Applications (FPL)*, Sep. 2023, pp. 19–26, Gothenburg, Sweden. Available: doi: 10.1109/FPL60245.2023.00011, arXiv:2406.02579, HAL:04277512
- [LC22] **L. Ledoux** and M. Casas, "A Generator of Numerically-Tailored and High-Throughput Accelerators for Batched GEMMs," in *2022 IEEE 30th Annual International Symposium on Field-Programmable Custom Computing Machines (FCCM)*, May 2022, pp. 1–10, New York, USA. Available: doi: 10.1109/FCCM53951.2022.9786164, HAL:04103774

Poster Presentations

- [LC24b] **L. Ledoux** and M. Casas, "LLMMMM: Large Language Models Matrix-Matrix Multiplications Characterization on Open Silicon" in *2024 11th BSCSymposium*, May 2024, Barcelona, Spain. Available: HAL:04592229
- [LC24a] **L. Ledoux** and M. Casas, "The Grafted Superset Approach: Bridging Python to Silicon with Asynchronous Compilation and Beyond" in *2024 4th Workshop on Open-Source Design Automation (OSDA)*, hosted at the International Conference on Design, Automation and Test in Europe Conference (DATE), March 25, 2024, at Palacio De Congresos Valencia (Valencia Conference Centre - VCC), Valencia, Spain. Available: HAL:04587458
- [LC23b] **L. Ledoux** and M. Casas, "Open-Source GEMM Hardware Kernels Generator: Toward Numerically-Tailored Computations" in *2023 10th BSCSymposium*, May 2023, Barcelona, Spain. Available: arXiv:2305.18328, HAL:04094835

Invited Talks

- [LC19] **L. Ledoux** and M. Casas, "Accelerating DL inference with (Open)CAPI and posit numbers," in *OpenPOWER Summit 2019*, Lyon, France: Linux Foundation, Oct. 2019. Available: HAL:04094850

Languages

French	Native	
Spanish	Native	(with an honest french accent)
English	Full Proficiency	

Skills

category 1	XX	category 2	YY
category 1	XX	category 2	YY
category 1	XX	category 2	YY
Programming	Java, Python, C++		
Languages	English, Spanish		