

Research Interests

Distributed Systems, Dist. Computing, Persistent Memory, Concurrency, Language Runtimes, Cloud Infrastructures

Education

- 2018 - 2023 **Ph.D. in Computer Science**, Institut Polytechnique de Paris, Palaiseau (91), France.
Thesis: “A Support for Persistent Memory in Java” – Advisors: *Pierre Sutra, Gaël Thomas*.
- 2015 - 2018 **Master of Engineering in Computer Science**, Télécom SudParis, Évry (91), France.
Majors: *Distributed systems and computing* – Graduated first in class.
- 2013 - 2015 **MPSI/MP* (CPGE)**, Lycée Camille Guérin (86), France.
Intense & highly « competitive exam preparatory courses », for admission to french higher-education national engineering schools. Majors: *Mathematics, Physics*; Minor: *Computer Science*
- 2010 - 2013 **Science baccalauréat**, Lycée Pilote Innovant et International (86), France.
With honours, European class in engineering sciences, Majors: *Mathematics, Engineering sciences*

Experience

Research

- Oct 2018 **Graduate Research Assistant at Institut Polytechnique de Paris**, France.
- Feb 2023 Group: *Parallel and Distributed Systems* – Advisors: *Pierre Sutra, Gaël Thomas*
 - **NVMM & FaaS**: investigate persistent memory use for stateful serverless workloads.
 - **J-NVM**: a pure-java library to efficiently support persistent memory in Java.
- Mar 2018 **Research Intern at IMDEA Software**, Madrid, Spain.
- Aug 2018 Advisor: *Alexey Gotsman* – Other collaborator: *Gregory Chockler*
 - **White-box atomic multicast**: a novel & efficient distributed protocol for genuine atomic multicast. Implemented in *C* with *libevent*, evaluated in *local* and *geo-wide* area networks.

Undergraduate Research Projects

- Fall 2017 **Scalevisor**, a research microkernel and bare-metal hypervisor for NUMA machines.
Master 2 project at *Télécom SudParis*, 2-student groupwork – Advisor: *Gaël Thomas*.
 - Port of the microkernel from x86 AMD platform to Intel's. (*C*, *x86 assembly*)
 - Add support for vendor-specific virt. extensions (*Intel VMX*), replacing *AMD-V* & *AMD-Vi*.
- Spring 2017 **Mesosearch**, investigate dynamic service scaling for orchestrated containers.
Master 1 project at *Télécom SudParis*, 4-student groupwork – Advisors: *Pierre Sutra, Gaël Thomas*.
 - Deployment of a real-world distributed test app – a fully scalable and elastic web search engine using *Apache Mesos*, *Zookeeper*, *HDFS*, *Hadoop*, *Myriad*, *Nutch* and *Elasticsearch*.
 - Implementation of an application-oriented resource monitoring system for Mesos, providing necessary data to enable automatic and dynamic scaling.

Student Volunteering

- Oct 2015 **Sys & Net Admin at MiNET**, Student Internet Service Provider, Évry (91), France.
- Jun 2019 Volunteer in the free-software student association. Internet access provider and network infrastructure for the on-campus housing. Approx. 850 rooms in 7 buildings, within a team of 15 admins.
 - **IT support**: help-desk activities and free-software promotion to all students on campus.
 - **Event organization**: Linux install party, free software & technical annual conference, massive triennial student night party with more than 1000 attendees.
 - **IT Admin**: (*SYS*) Debian, Proxmox VE, (*NET*) Cisco, (*Software Dev*) Ruby, Python, Bash.
- May 2016 **Training supervisor at MiNET**, Student Internet Service Provider, Évry (91), France.
- May 2017 In charge of technical trainings for new members (student administrators).

Publications

- SOSP'21** *J-NVM: Off-heap Persistent Objects in Java.*
Anatole Lefort, Yohan Pipereau, Kwabena Amponsem, Pierre Sutra, Gaël Thomas.
In *Symposium on Operating Systems Principles* (SOSP), Virtual, 2021
- DSN'19** *White-Box Atomic Multicast.*
Alexey Gotsman, **Anatole Lefort**, Gregory V. Chockler.
In *Dependable Systems and Networks* (DSN), Portland (OR), USA, 2019

Talks

Workshop *J-NVM: Off-heap Persistent Objects in Java.*

Paper **Anatole Lefort**, Yohan Pipereau, Kwabena Amponsem, Pierre Sutra, Gaël Thomas.
In *Non-Volatile Memories Workshop* (NVMW), San Diego (CA), USA, May 2022

Invited Talk *J-NVM: Off-heap Persistent Objects in Java.*

In *Heterogeneous Memory Workshop* (HMEM), Virtual, July 2022

Prizes and Awards

- **Laureate of “Engineers of the Future Awards”**, *Research Engineer category, 2022 Edition.*
Sponsored & Issued by *L’Usine Nouvelle* - a renown french business magazine.
- **Best student publication in ICTs at Institut Polytechnique de Paris, 2022 Edition.**
Sponsored & Issued by *Labex DigiCosme*, *Institut Polytechnique de Paris* and *Université Paris-Saclay*.

Grants

- **NVMW Student Travel Grant** to attend *NVMW’22* (San Diego, CA, USA).
- **Fully funded Ph.D. scholarship** from *Institut Mines-Télécom*, “*Future & Rupture*” campaign (2018).
Awarded on *Academic Excellence* criteria, ranked 1st for *Télécom SudParis*.

Teaching Experience

- **CSC 3102: Operating systems, Unix & Shell scripting (Bash):**
Lecturer Fall 2020
Teaching Assistant Fall 2019
- **CSC 3101: Data structures & algorithms (Java 1):**
Teaching Assistant Fall 2020
- **CSC 4102: Object-oriented programming & software engineering (Java 2):**
Teaching Assistant Spring 2021
Teaching Assistant Spring 2020

Skills

Computing

Programming Shell, Java, C, Python, SQL, Latex,
Go, OCaml, B-method, PHP, Ruby

Systems Linux, Unix, Cisco IOS

IT Admin

Virt. Proxmox VE, QEMU/KVM, LXC,
Docker

Services FreeRadius, Apache, Nginx, Open-
VPN, Zabbix, ISC-KEA, ELK

Languages

English European C1 level - TOEIC 970

French Native speaker

German European A2 level

Spanish Beginner

Interests

Hobbies Computer tinkering (hardware and software); problem solving.
Freeline skating, Outdoor activities.

Sports Cycling (Road, MTB, Touring, Bikepacking),
Running (Road or Trail), Swimming
Hiking & Backpacking, Skiing, Snowboarding

Past Sports Gymnastics, Tennis, Judo