Anatole Lefort

Open to postdoc positions

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Research Interests

Distributed Systems & Computing, Operating Systems, Concurrency, Persistent Memory, Language Runtimes

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 « competitve 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 - Feb 2023 **Graduate Research Assistant at Institut Polytechnique de Paris**, France.
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 - Aug 2018 **Research Intern at IMDEA Software**, *Madrid*, Spain.
Advisor: *Alexey Gotsman*
- **White-box atomic multicast:** a novel & efficient distributed protocol for genuine atomic multicast. Implemented in *C* with *libevent*, evaluatuated 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 - Jun 2019 **Sys & Net Admin at MiNET**, *Student Internet Service Provider*, Évry (91), France.
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 - May 2017 **Training supervisor at MiNET**, *Student Internet Service Provider*, Évry (91), France.
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, OpenVPN, 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