

# Pierre JACQUET

Research scientist in cloud computing

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## Work Experience

- Jan. 2025 - **École de technologie supérieure**, Montréal, Canada  
Dec. 2026 Postdoctoral Researcher  
Topic: A Better Sharing of Cloud Resources, In a partnership with OVHcloud Montréal
- Oct. 2021 - **Université de Lille, Inria**, Lille, France  
Sept. 2024 Ph.D. Candidate  
Topic: Enhancing IaaS Consolidation with Resource Oversubscription
- Sept. 2018 - **Groupe BPCE**, Paris, France  
Sept. 2021 Mainframe Security Architect  
Apprenticeship. Project management related to the banking security ecosystem
- 2018 **Direction Générale des Finances Publiques**, Paris, France  
Intern. Java developer

## Education

- 2024 **Université de Lille**, Lille, France  
Ph.D. –Computer Science  
Advisors: Thomas Ledoux, Romain Rouvoy
- 2021 **Université de Paris-Est**, Créteil, France  
Master of Computer Science

## Publications

### International Journal/Conference<sup>1</sup> Publications:

- [1] **Pierre Jacquet**, Camille Coti, Marcos Dias de Assunção, and Romain Rouvoy. CINERGY: Deterministic Power Monitoring for Carbon Accounting in the Cloud. *IEEE Transactions on Cloud Computing (TCC)*, pages 1–12, 2026
- [2] **Pierre Jacquet**, Camille Coti, and Marcos Dias de Assunção. Larger Cloud Servers, Fewer Hosts? On the Evolution of VM Sizes in IaaS Platforms. In *IEEE International Symposium on Cluster, Cloud and Internet Computing (CCGrid)*, pages 1–10. IEEE, 2026
- [3] **Pierre Jacquet**, Maxime Agusti, Eddy Caron, Camille Coti, Marcos Dias de Assunção, Laurent Lefèvre, and Anne-Cécile Orgerie. Untangling GPU Power Consumption: Job-Level Inference in Cloud Shared Settings. In *European Conference on Computer Systems (EuroSys)*, pages 1–14. ACM, 2026
- [4] **Pierre Jacquet**, Thomas Ledoux, and Romain Rouvoy. SlackVM: Packing Virtual Machines in Oversubscribed Cloud Infrastructure. In *IEEE International Conference on Cluster Computing (CLUSTER)*, pages 190–201. IEEE, 2024
- [5] **Pierre Jacquet**, Thomas Ledoux, and Romain Rouvoy. SweetspotVM: Oversubscribing CPU without Sacrificing VM Performance. In *IEEE/ACM International Symposium on Cluster, Cloud and Internet Computing (CCGrid)*, pages 148–157. IEEE, 2024
- [6] **Pierre Jacquet**, Thomas Ledoux, and Romain Rouvoy. SCROOGEVM: Boosting Cloud Resource Utilization with Dynamic Oversubscription. *IEEE Transactions on Sustainable Computing (TSUSC)*, pages 754–765, 2024
- [7] **Pierre Jacquet**, Thomas Ledoux, and Romain Rouvoy. CLOUDFACTORY: An Open Toolkit to Generate Production-like Workloads for Cloud Infrastructures. In *IEEE International Conference on Cloud Engineering (IC2E)*, pages 81–91. IEEE, 2023

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<sup>1</sup>In distributed systems, conferences are often the primary venues for publishing high-impact research and typically involve rigorous peer review. Author order is determined by individual contribution to the paper.

## Workshop and Short Papers:

- [8] **Pierre Jacquet** and Adrien Luxey-Bitri. The Case for Time-Shared Computing Resources. In *Computing Within Limits (LIMITS)*, pages 1–8. IEEE, 2025
- [9] **Pierre Jacquet**, Camille Coti, Marcos Dias de Assunção, and Romain Rouvoy. CINERGY: Reasoning over the Worst Case Power Consumption of Cloud Virtual Machines. In *IEEE International Symposium on Cluster, Cloud and Internet Computing (CCGrid)*, pages 586–589. IEEE, 2025

## Thesis:

- [1] Pierre Jacquet. *Enhancing IaaS Consolidation with Resource Oversubscription*. PhD thesis, Université de Lille, 2024
- [2] Pierre Jacquet. Mainframe footprint and consumption, an evaluation based on sustainable IT approach. Master’s thesis, Université Paris 12, 2021

## Research artifacts

This section presents a list of software artifacts for which I directly contributed to the implementation and source code. The self-assessment of each artifact follows the criteria defined in the document Criteria for Software Self-Assessment v3 published by Inria.

- Cinergy framework. *Family*: Vehicle; *Audience*: Partners; *Evolution*: No future; *Duration*: 1 year; *Contribution*: Leader; *URL*: <https://github.com/jacquetpi/cinergy-models>.  
Software suite enabling energy measurements of Virtual Machines in a Cloud context.
- Untangling GPU Power Consumption. *Family*: Vehicle; *Audience*: Partners; *Evolution*: No future; *Duration*: 1 year; *Contribution*: Leader; *URL*: <https://zenodo.org/records/17339127>.  
Software suite enabling energy measurements of GPUs shared across concurrent workloads.
- CloudFactory. *Family*: Research; *Audience*: Partners; *Evolution*: Basic; *Duration*: 2 years; *Contribution*: Leader; *URL*: <https://github.com/jacquetpi/cloudfactory>.  
CloudFactory is a tool designed for researchers to reproduce realistic IaaS workloads (sets of virtual machines) on one or multiple servers. Virtual machines arrive dynamically and exhibit realistic usage profiles, inspired by statistical traces from cloud operators.
- ScroogeVM. *Family*: Vehicle; *Audience*: Partners; *Evolution*: No future; *Duration*: 1 year; *Contribution*: Leader; *URL*: <https://github.com/jacquetpi/scroogevm>.  
ScroogeVM is a prototype orchestrator estimating node overcommitment ratios based on workload usage and stability.
- SlackVM. *Family*: Vehicle; *Audience*: Partners; *Evolution*: No future; *Duration*: 1 year; *Contribution*: Leader; *URL*: <https://github.com/jacquetpi/slackvm>.  
SlackVM is a prototype orchestrator dynamically partitioning CPU cores of a node across different overcommitment levels.
- SweetSpotVM. *Family*: Vehicle; *Audience*: Partners; *Evolution*: No future; *Duration*: 1 year; *Contribution*: Leader; *URL*: <https://github.com/jacquetpi/sweetspotvm>.  
SweetSpotVM is a prototype orchestrator introducing heterogeneous vCPU performance levels for virtual machines under different overcommitment ratios.

## Teaching experience

### Université de Lille

During my PhD, I held two part-time teaching contracts at the University of Lille over the 2022–23 and 2023–24 academic years, for a total of 102 hours of teaching (equivalent TD). My responsibilities consisted in delivering tutorials and practical sessions, grading, and supervising students, based on existing pedagogical material and course content.

- Introduction to Object-oriented programming. Fall22, Fall23 (Teaching Assistant, 30 students, L2)
- Advanced Object-oriented programming. Spring23 (Teaching Assistant, 20 students, M1)
- Introduction to Software security. Spring23 (Teaching Assistant, 20 students, M1)

### CentraleSupélec

During my postdoctoral fellowship, I designed and supervised a 35-hour student project on the environmental impact of cloud computing, directly grounded in my research. This included the definition of learning objectives, project

scope, creation of pedagogical content (software tools and datasets), as well as evaluation criteria and grading.

- Environmental Impact of Cloud Computing (Hackathon). Spring26 (Consultant, 30 students, ING1)

## ————— Research Grants

- **Mitacs Elevate Fellowship**, Canada, 2024 — \$120,000 CAD for postdoctoral research on cloud resource optimization in collaboration with OVHcloud.

## ————— Service

### **Conference - PC Member:**

- IEEE CloudCom 2026
- IEEE Cluster 2026
- INFRASTRUCTURE (Workshop) 2025, 2026
- Compas 2025

### **Conference - Artifact PC Member:**

- IEEE/IFIP DSN 2026
- IEEE CASCON 2025

### **Conference - General Chair:**

- Web Chair: INFRASTRUCTURE (Workshop) 2025, 2026

### **Conference - Reviewer:**

- GreenNet Workshop 2025

### **Journal - Reviewer:**

- ACM Transactions on Autonomous and Adaptive Systems

### **Journal - Sub-reviewer:**

- IEEE Internet Computing
- IEEE/IFIP DSN 2024
- ACM Middleware 2023
- IEEE Cluster 2023

### **Organization:**

- IEEE ICC (guide, session chair) 2025

## ————— Distinctions:

During my career, I have received the following awards and distinctions:

Travel grant, EuroSys 2026 — awarded to present on main track

24-month scholarship, ÉTS Montréal (MITACS Elevate program) — awarded after an application to an excellence fellowship

Best Contribution Award, IBM Master the Mainframe (2020) — international innovation competition with 25,000 participants

Jury Prize, Safran Black-Out Challenge (2019) — national innovation competition with 650 participants

## ————— Outreach

### **Talks:**

I was invited to present my work in the following events:

- *Measuring Energy in Hyperscale Cloud Environments* Program  
**Keynote**, 4th TDIS workshop, held with EuroSys'26, Edinburgh, UK, April, 2026
- *Panel on Industrial Opportunities After a PhD* Program  
Invited Talk, Université du Québec (ÉTS), Montréal, Canada, April, 2026
- *Datacenter Environmental Impact* Program  
Invited talk, Colloque Numérique Responsable hosted by ÉTS, Montréal, Canada, November, 2025
- *Dynamic Overcommitment in OpenStack* Program  
Invited talk, OpenInfra Summit, École polytechnique (X), France, October, 2025
- *Orchestrating the Sharing of Cloud Resources*  
Invited talk, DataMove (Inria) seminar, en ligne, France, October, 2025
- *Untangling GPU Power Consumption*  
Invited talk, Calcul Québec seminar, Montréal, Canada, May, 2025
- *Shared Computing: Why and How?* Program  
Invited talk, SEMTL seminar hosted by Concordia University, Montréal, Canada, February, 2025
- *On the Sharing of Cloud Computing resources*  
Invited talk, Avalon (Inria) seminar, Lyon, France, November, 2024
- *Le partage des ressources de calcul du Cloud*  
Invited talk, Aneo (invited by a private consulting company), Paris, France, November, 2024
- *The Last Frontier: Sharing Cloud Resources* Program, Slides  
Invited talk, Eco-ICT Autumn School, Beg Meil, France, October, 2024
- *SlackVM, Joindre les taux de surallocation pour mieux remplir les infrastructures Cloud* Program  
Talk, COMPAS, Nantes, France, July, 2024
- *A less brown Cloud: How to use less resources?* Video  
Talk, Green Days, Toulouse, France, March, 2024
- *Cloud Computing, doing more with less using oversubscription* Program  
Talk, GDR RSD and ASF Winter School, Les 7 Laux, France, February, 2024
- *A less brown Cloud using oversubscription*  
Seminar, Epiférence (EPISEN school), Créteil, France, February, 2024
- *SCROOGEVM : Accroître l'utilisation des ressources du cloud en ajustant dynamiquement la surallocation* Program  
Talk, COMPAS, Annecy, France, July, 2023
- *Improve cloud resource utilization with dynamic oversubscription* Program  
Talk, GDR RSD and ASF Winter School, Les 7 Laux, France, February, 2023
- *Boosting Cloud Resource Utilization with Greedy Oversubscription* Program  
Talk, Journées Cloud/Edge, Télécom Paris, Paris, France, December, 2022
- *Sampling Resource Requirements to Optimize VM Sizing* Program  
Talk, LUCS-PACE Summer School, Sundvolden, Norway, April, 2022
- *Sampling Resource Requirements to Optimize VM Sizing* Program  
Poster, EuroSys, Rennes, France, April, 2022
- *Improve cloud efficiency with better VM sizing* Program  
Talk, GDR RSD and ASF Winter School, Les 7 Laux, France, March, 2022
- *Sampling Resource Requirements to Optimize VM Sizing* Program  
Talk, LUCS-PACE Research Workshop, Munich, Germany, March, 2022
- *Mainframe Carbon footprint* Program  
Talk, LUCS-PACE Research Workshop on Green Computing, Lille, France, September, 2021

## Interviews:

Centre Inria de l'Université de Lille and Pierre Jacquet. Pas de panique, je vous explique ! l'optimisation du cloud, 2024.

<https://www.canal-u.tv/chaines/inria/pas-de-panique-je-vous-explique-l-optimisation-du-cloud>  
Amélie Chodorge and Pierre Jacquet. Podcast Éco-Ingénieurs: Optimiser les ressources de l'IA, 2025.

<https://beacons.ai/ecoingenieux>

### Press Articles:

**Pierre Jacquet**, Thomas Ledoux, and Romain Rouvoy. La chasse au gaspillage dans le cloud et les data centers. *Ouest-France*, 2023. Notes: Plus de 300 000 impressions

<https://theconversation.com/la-chasse-au-gaspillage-dans-le-cloud-et-les-data-centers-196669>

**Pierre Jacquet**. Agir face aux enjeux environnementaux, la thèse comme levier. *Docteurs SPI*, 2025.

<https://www.docteurs-spi.org/post/agir-face-aux-enjeux-environnementaux-la-th%C3%A8se-comme-levier>

### Industrial transferts:

*PhD – Inria Défi project with OVHcloud*

My PhD was conducted within an Inria *Défi* project involving OVHcloud as an industrial partner. The collaboration included access to internal datasets and infrastructure metrics, joint definition of research questions, regular technical exchanges, and transfer of research results related to resource management.

Contract type: Inria Défi collaborative framework.

Participants: Inria, OVHcloud.

Duration: 3 years.

*Postdoc – MITACS industrial partnership with OVHcloud*

My postdoctoral fellowship was hosted at OVHcloud Montréal under a two-year MITACS contract involving OVHcloud and ÉTS Montréal. The objectives included the integration of research results on orchestration (completed in early 2026), advanced GPU orchestration, and the improvement of carbon accounting methodologies for cloud infrastructures.

Contract type: MITACS industrial research contract.

Participants: ÉTS Montreal, OVHcloud, MITACS.

Duration: 2 years.

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## References

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