Pierre Vernimmen

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Pierre Vernimmen | Verpierre

Louvain-la-Neuve, Belgium

Experience

- **UCLouvain [🌐]** — *October 2024 – Present*
  PhD student and teaching assistant — Louvain-la-Neuve, Belgium
  - Conduct research in optimization
  - Lead exercise sessions and organize projects for undergraduate and graduate students
  - Supervised by Prof. François Glineur

- **Inria [🌐]** — *February 2026 – April 2026*
  Visiting PhD student — Paris, France
  - Worked on accelerated methods within the Sierra Team
  - Hosted by Adrien Taylor and Baptiste Goujaud

- **UCLouvain [🌐]** — *September 2022 – June 2024*
  Tutor — Louvain-la-Neuve, Belgium
  - Led exercise sessions for undergraduate students
  - Courses in calculus, optimization, signals and systems, and algorithms

Education

- **UCLouvain** — *September 2022 – June 2024*
  Master's degree in Mathematical Engineering (Optimization and Data Science) — Louvain-la-Neuve, Belgium
  - Grade: magna cum laude

- **UCLouvain** — *September 2019 – June 2022*
  Bachelor's degree in Engineering (Applied Mathematics and Physics) — Louvain-la-Neuve, Belgium

- **Institut Saint-Louis** — *June 2019*
  Secondary Education (Mathematics and Science) — Namur, Belgium

Publications

C=Conference, J=Journal, T=Thesis

[C.1] Pierre Vernimmen & François Glineur (2024). **Convergence analysis of an inexact gradient method on smooth convex functions**. In *Proceedings of the 32nd European Symposium on Artificial Neural Networks, Computational Intelligence and Machine Learning*, pp. 125–130, Brugge, Belgium.

[C.2] Pierre Vernimmen & François Glineur (2026). **Empirical and computer-aided robustness analysis of long-step and accelerated methods in smooth convex optimization**. In *Modelling, Computation and Optimization in Information Systems and Management Sciences (MCO 2025)*, Vol. 1, Lecture Notes in Networks and Systems, Vol. 1688, Springer, pp. 354–366, Metz, France.

[C.3] Pierre Vernimmen & François Glineur (2026). **Can Acceleration in Gradient-Norm Minimization Be Anytime? Sharp Last-Iterate Limits in Smooth Convex Optimization**. Accepted for the *Optimization for Machine Learning Workshop at NeurIPS 2026*, Sydney, Australia.

[J.1] Pierre Vernimmen & François Glineur (2026). **Worst-case convergence analysis of relatively inexact gradient descent on smooth convex functions**. *Neurocomputing*, Vol. 660, article 131883.

[T.1] Pierre Vernimmen (2024). **Tight Convergence Analysis of Exact and Inexact Gradient Methods with Constant and Silver Schedules**. Master's Thesis, UCLouvain.

Reviewer

- Mathematics of Operations Research

Skills

- **Programming Languages:** Python, Julia, R, C, C++
- **Mathematical & Statistical Tools:** MATLAB, Wolfram Mathematica

Teaching Experience

- **Stochastic variance-reduced optimization algorithms and applications to federated learning** *October 2025*
  Graduate school in optimization: led exercise sessions with coding exercises
- **LINMA1702: Optimization Models and Methods 1** *2025–2026*
  Undergraduate optimization course: supervised a project
- **LINMA2471: Optimization Models and Methods 2** *2024–2025, 2025–2026, 2026–2027*
  Graduate optimization course: exercise sessions and projects
- **LEPL1106: Signals and Systems** *2024–2025*
  Undergraduate course: coordinated tutors and homework assignments
- **LINMA1702: Optimization Models and Methods 1** *2023–2024*
  Undergraduate optimization course: led exercise sessions
- **LEPL1106: Signals and Systems** *2022–2023, 2023–2024*
  Undergraduate course: led exercise sessions and graded homework
- **LEPL1102: Calculus 1** *2022–2023, 2023–2024*
  Undergraduate course: led exercise sessions
- **LINFO1113: Numerical Algorithms** *2022–2023*
  Undergraduate course: led exercise sessions

Research Talks

EUROPT 2026, Linz, Austria. *Optimizing gradient descent: Step-size design through bounded-distance PEPs* (8–10 July 2026).

SIAM Conference on Optimization 2026, Edinburgh, UK. *Optimizing gradient descent: Step-size design through bounded-distance PEPs* (2–5 June 2026).

EUROPT 2025, Southampton, UK. *Computer-aided analysis of relatively inexact gradient descent in smooth convex optimization* (29 June – 2 July 2025).

MCO 2025, Metz, France. *Empirical and computer-aided robustness analysis of long-step and accelerated methods in smooth convex optimization* (4–6 June 2025).

ESANN 2024, Brugge, Belgium. *Convergence analysis of an inexact gradient method on smooth convex functions* (9–11 October 2024).

Honors and Awards

- **Top five among first-year students in the Belgian Mathematical Olympiad** *June 2014*
  La Société Belge des Professeurs de Mathématiques
- **Top five at the Belgian Youth Chess Championship** *2022*
- **Belgian Inter-School Chess Team Champion** *2018*

Leadership Experience

- **Scout leader** *September 2019 – September 2024*
  Les Scouts, Belgium
  - Group leader for children and teenagers
  - Managed activities and cash flow

Additional Information

Languages: French (native), English (fluent), Dutch (elementary)
Interests: Chess, sports