Alexandre **Pasco**

3rd YEAR PH.D. STUDENT · GRADUATED ENGINEER · APPLIED MATHEMATICS

44000 Nantes, France

+33 6 45 11 30 90 | ✉ alexandre.pasco@ec-nantes.fr | 🌐 alexandre-pasco.github.io | alexandre-pasco | in alexandrepascoecn | 🎓 Alexandre Pasco

My research is mainly about dimension reduction methods for high-dimensional approximation. I try my best to promote open science.

Education

Ph.D. applied mathematics, ECOLE CENTRALE DE NANTES — *Nantes, France* — *Dec. 2022 - Present*
(Master's) Engineer's degree: applied mathematics, ECOLE CENTRALE DE NANTES — *Nantes, France* — *Sep. 2019 - Sep. 2022*
Prepa Mathematics-Physics, LYCÉE CLÉMENCEAU — *Nantes, France* — *Sep. 2017 - Aug. 2019*

Experience

Teacher assistant, ECOLE CENTRALE DE NANTES — *Nantes, France* — *Feb. 2023 - Mar. 2025*
Researcher internship, LABORATOIRE JEAN LERAY — *Nantes, France* — *Apr. 2022 - Sep. 2022*
Actuarial internship, UNION MUTUALISTE RETRAITE — *Nantes, France* — *Apr. 2021 - Aug. 2021*

Publications

JOURNAL ARTICLES

- Nouy, A. and Pasco, A.: Dictionary-based model reduction for state estimation. — *Apr. 2024*
  Adv Comput Math 50, 32. https://doi.org/10.1007/s10444-024-10129-4

PREPUBLICATIONS

- Nouy, A. and Pasco, A.: Surrogate to Poincaré inequalities on manifolds for dimension reduction in nonlinear feature spaces. — *May. 2025*
  Submitted. https://arxiv.org/abs/2505.01807

Presentations

ORAL PRESENTATIONS

- Séminaire des doctorants du LMJL — *Nantes, France*
  Model Reduction for parameterized PDEs: why and how ? — *Mar. 2023*
- Young Mathematicians in Model Order Reduction Conference (YMMOR) — *Ulm, Germany*
  Dictionary-based model reduction for state estimation. — *Mar. 2023*
- Séminaire de Mathématiques Appliquées du LMJL — *Nantes, France*
  Dictionary-based model reduction for state estimation. — *Apr. 2023*
- Congrès des Jeunes Chercheuses et Chercheurs en Mathématiques et Applications (CJC-MA) — *Gif-sur-Yvette, France*
  Dictionary-based model reduction for state estimation. — *Sep. 2023*
- SIAM Conference on Uncertainty Quantification — *Trieste, Italy*
  Dictionary-based model reduction for state estimation. — *Feb. 2024*
- Young Mathematicians in Model Order Reduction Conference (YMMOR) — *Stuttgart, Germany*
  Structured Nonlinear Dimension Reduction Using Gradient Evaluations. — *Mar. 2024*
- Rencontres Doctorales Lebesgue (RDL) — *Angers, France*
  Dimension reduction using Poincaré inequalities. — *Apr. 2024*
- Séminaire des jeunes chercheurs en analyse de l'IRMAR. — *Rennes, France*
  Poincaré inequalities on manifolds for dimension reduction in nonlinear feature spaces. — *Dec. 2024*
- Young Mathematicians in Model Order Reduction Conference (YMMOR) — *Trieste, Italy*
  Surrogate to Poincaré inequalities on manifolds for dimension reduction in nonlinear feature spaces. — *May. 2025*
- RT-UQ PhD-day — *Grenoble, France*
  Surrogate to Poincaré inequalities on manifolds for dimension reduction in nonlinear feature spaces. — *May. 2025*

POSTER PRESENTATIONS

-   Mascot-Num Conference   *Le Croisic, France*
    Dictionary-based model reduction for state estimation.   *Apr. 2023*
-   46ème Congrès National d'Analyse Numérique (CANUM)   *Ile de Ré, France*
    Dictionary-based model reduction for state estimation.   *May. 2024*

Services

Committee member, YMMOR COMMITTEE   *Sep. 2023 - Present*
Doctoral student representative, LABORATOIRE JEAN LERAY LABORATORY BOARD   *Nantes, France*   *Sep. 2024 - Jun 2025*
Referent Researcher in middle schools, MATH.EN.JEANS   *Nantes, France*   *Oct. 2023 - Mar 2025*
Volunteer tutor in Maths and Physics, ECOLE CENTRALE DE NANTES   *Nantes, France*   *Oct. 2019 - Apr 2021*

Teaching

TEACHER ASSISTANT

Mathematics for engineering, ECOLE CENTRALE DE NANTES, Undergraduate course   *Nantes, France*   *Feb. 2023 - Jan 2025*
Ordinary Differential Equations, ECOLE CENTRALE DE NANTES, Undergraduate course   *Nantes, France*   *Feb. 2025 - Mar 2025*
Applied mathematics project, ECOLE CENTRALE DE NANTES, Graduate project supervision   *Nantes, France*   *Oct. 2023 - Apr 2025*

Skills

Programming   **Python** (Advanced), **LaTeX** (Advanced), **MATLAB** (Intermediate), C++ (Basic), F90 (Basic), SQL (Basic), SAS (Basic)
Languages   **French** (Native), **English** (Advanced), **Japanese** (Intermediate JLPT N4), Spanish (Basic).