

Alexandre Pasco

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

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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 CLÉMENTEAU

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
- Semaines d'Etudes Mathématiques - Entreprises et Société (SEMES). Nantes, France
Reconstruction of a latent space from a redox signal. Nov. 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

Surrogate to Poincaré inequalities on manifolds for dimension reduction in nonlinear feature spaces.

Grenoble, France

May. 2025

POSTER PRESENTATIONS

- Mascot-Num Conference
 - 46ème Congrès National d'Analyse Numérique (CANUM)

Dictionary-based model reduction for state estimation.

Dictionary-based model reduction for state estimation.

Le Croisic, France

Ile de Ré, France

Apr. 2023

May. 2024

Services

- Committee member, YMMOR COMMITTEE

Doctoral student representative, LABORATOIRE JEAN LERAY LABORATORY BOARD

Referent Researcher in middle schools, MATH.EN.JEANS

Volunteer tutor in Maths and Physics, ECOLE CENTRALE DE NANTES

Sep. 2023 - Present

Nantes, France

Nantes, France

Nantes, France

Sep. 2024 - Jun 2025

Oct. 2023 - Mar 2025

Oct. 2019 - Apr 2021

Teaching

TEACHER ASSISTANT

- Mathematics for engineering, ECOLE CENTRALE DE NANTES, Undergraduate course

Ordinary Differential Equations, ECOLE CENTRALE DE NANTES, Undergraduate course

Applied mathematics project, ECOLE CENTRALE DE NANTES, Graduate project supervision

Nantes, France

Nantes, France

Nantes, France

Feb. 2023 - Jan 2025

Feb. 2025 - Mar 2025

Oct. 2023 - Apr 2025

Skills

- Programming

Languages

Python (Advanced), LaTeX (Advanced), MATLAB (Intermediate), C++ (Basic), F90 (Basic), SQL (Basic), SAS (Basic)

French (Native), English (Advanced), Japanese (Intermediate JLPT N4), Spanish (Basic).