Curriculum vitae - Othmane Jerhaoui

INSA Rouen Normandie,
Laboratoire LMI, CNRS EA - 3226
685 Avenue de l'Université,
76800 Saint-Etienne-du-Rouvray.

E-mail : othmane.jerhaoui@insa-rouen.fr

Personal information

Born in June 22nd, 1993 in Casablanca, Morocco.

Research interests

o Partial differential equations.
o Optimal control.
o Optimization in non Euclidean spaces.
o Nonsmooth analysis.
o Game theory.
o Multi-agent systems.
o Mean-field control.
o Metric geometry.

Education

2019 -2022 : Ph.D. in mathematics at ENSTA Paris France. Advisors: Hasnaa Zidani and Frédéric Jean. Defended on the 15th of december 2022.
Title: Viscosity theory of first order Hamilton-Jacobi equations in some metric spaces.
2018 - 2019 : Master 2 in mathematics: "Analyse Modélisation Simulation", University Paris-Saclay, Orsay, France.
2017 - 2018 : Master 1 in mathematics, University Paris-Saclay, Versailles, France.
2014 - 2016 : Master 2 in materials science engineering, Ecole Européenne d'Ingénieurs en Génie des Matériaux (EEIGM), Nancy, France.
2012 - 2016 : Master 2 in electromechanical engineering, Mines Rabat (ENSMR), Morocco.
2010 - 2012 : Preparatory classes in Mathematics and Physics, Réda Slaoui high school, Morocco.

Research experiences and internships

Since january 2023: Postdoctorate at INSA Rouen Normandie, COPTI project. (Link)
04/2019 - 10/2019: Master thesis under the supervision of Hasnaa Zidani, ENSTA PARIS.
Title: Hamilton-Jacobi-Bellman equations on topological networks.
02/2016 - 09/2016: Master thesis in CEA LETI, Grenoble, France.
Title: Reliability assessment of copper pillar bumps for fine pitch applications.
06/2015 - 09/2015: Internship at Helmut-Schmidt university, Hamburg, Germany.
Title: Implementation on Matlab of the 3D Mooney–Rivlin hyperelasticity model.

Scientific stays

Mars 2022 - April 2022: Scientific stay, working with professor Cristopher Hermosilla at Universidad Técnica Federico Santa María, Valparaíso, Chile.
Title: Linear-quadratic optimal control problem under probability knowledge of the initial condition.

July 2021: scientific stay at Cetraro, Italie. Summer school of the CIME foundation. Invited by: Maurizio Falcone.

Scholarships

2019-2022: Ph.D. fellowship Labex-LMH from the FMJH. (Link)

2018-2019: Master scholarship Sophie-Germain from the FMJH. (Link)

Teaching

Teaching assistant, INSA Rouen Normandie
  2022 - 2023:
    - *Calculus of variations*, graduate course.
    - *dynamical systems*, undegraduate course.

Teaching assistant, ENSTA Paris
  2021 - 2022:
    - *Dynamical systems*, undergraduate course.
  2020 - 2021:
    - *Quadratic optimization*, undergraduate course.
    - *Dynamical systems*, undergraduate course.
    - *Control systems*, graduate course.
  2019 - 2020 :
    - *Quadratic optimization*, undergraduate course.
    - *Control systems*, graduate course.

Languages

- Arabic (native language).
- English (fluent).
- French (fluent).

Programming skills

C/C^{++}, Matlab, Scilab, Python, SageMath.

Participation in Seminars

Seminar of optimization, University of Avignon, november 10, 2022. Invited by: Térence Bayen.

Seminar in optimization and control, INSA Rouen Normandie, december 7, 2021. Invited by: Hasnaa Zidani. (Link)

Seminar DMAT, Universidad Technica Federico Santa Maria, Chile, June 17, 2021. Invited by: Cristopher Hermosilla. (Link)

Ph.D. student seminar, UMA, ENSTA Paris, june 30, 2021. (Link)

Ph.D. student seminar in science popularization, University Paris-Saclay, february 3, 2021. (Link)

Ph.D. student seminar in PDE's, University Paris-Saclay, december 9, 2020. (Link)

Participation in Conferences and Workshops

- Gaspard Monge Program for Optimization - PGMO days, november 29-30 2022, Gif-sur-Yvette, France. (Link).

- 25th International Symposium on Mathematical Theory of Networks and Systems, September 12-16 2022, Bayreuth, Germany. (Link)

- Workshop on Optimal Control Theory, June 22-24 2022, Rouen, France. (Link)

- 18th IFAC Workshop on Control Applications of Optimization, July 18-22 2022, Gif-sur-Yvette, France. (Link)

- French German Portuguese Conference on Optimization, May 3-6 2022, Porto, Portugal. (Link)

- Gaspard Monge Program for Optimization - PGMO days, december 1st 2021, Gif-sur-Yvette, France. (Link).

o French days on Optimization and Decision Science - SMAI MODE, 7-9 september 2020 (online). (Link)

Publications

o Frédéric Jean, Othmane Jerhaoui, Hasnaa Zidani. Mayer optimal control problem on Wasserstein spaces over Riemannian manifolds. IFAC-PapersOnLine, 55(16):44–49, 2022. (Link).

o Othmane Jerhaoui, Hasnaa Zidani. A general comparison principle for Hamilton Jacobi Bellman equations on stratified Domains. ESAIM: Control, Optimisation and Calculus of Variations. DOI : 10.1051/cocv/2022089. (Link).

o Frédéric Jean, Othmane Jerhaoui, Hasnaa Zidani. Optimal control problem on Riemannian manifolds under probability knowledge of the initial condition, submitted. HAL : 03564787 (Link).

o Othmane Jerhaoui, Hasnaa Zidani. Viscosity solutions of Hamilton-Jacobi equations in proper $\mathrm{CAT}(0)$ spaces,submitted. HAL : 03899199 (Link).