Marcelo Gallardo

MATHEMATICS · PUCP

San Isidro, Lima, Peru

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Education

Pontificia Universidad Católica del Perú   *Lima, Pe*
B.S. AND LIC. MATHEMATICS   *2020 - Present*
- **Master courses:** Optimal Transport, Stochastic Processes, Advanced Microeconomics
- 18.7/20

QLab   *Lima, Pe*
PUCP   *January 2022 and January 2023*
- **Courses**: Machine Learning for Social Sciences, Time Series and Machine Learning for Macroeconomics and Finance, Applied Econometrics

École Polytechnique Fédérale de Lausanne   *Lausanne, SW*
CYCLE PROPÉDEUTIQUE PHYSICS   *September 2019 - January 2020*
- **Courses 2019:** Advanced Real Analysis for Physicists, Advanced Linear Algebra for Physicists, Advanced Mechanics
- **Courses 2020-2021:** Numerical Physics I, Numerical Physics II

Experience

Pontificia Universidad Católica del Perú   *Lima, Pe*
Teaching Assistant   *March 2022 - November 2022*
- Creation and correction of problem sets.
- **Mathematics for economists 3:** real dynamical systems in continuous and discrete time.
- **Mathematics for economists 4:** basic convex analysis, static and dynamic optimization (optimal control).

Grupo de Análisis para el Desarrollo   *Lima, Pe*
RESEARCH ASSISTANT   *2022 and October 2023-present*
- Collaborated with Professor Juan L. Jara Almonte.
- Creation of lecture notes for the course Fundamentals of Econometrics.
- Working paper: innovation indicator and relation with other variables. Data processing, k-means clustering and confirmatory factor analysis.

Pontificia Universidad Católica del Perú   *Lima, Pe*
RESEARCH ASSISTANT   *2022-2023*
- Collaborated with Professor Jorge R. Chávez Fuentes.
- Working book about Linear Algebra and Static Optimization for Economists.
- Developed several proofs, examples and exercises, above all related to microeconomics.
- Working book about Dynamical Systems and Optimal Control in continuous time.
- Calculus of variations, economic growth models (Solow, Ramsey-Cass-Koopsman).

Working papers, papers and others

Exchange rate via Twitter with Manuel Loaiza and Gabriel Rodriguez.

Innovation in Peruvian universities, what is new? with Juan L. Jara.

Brouwer fixed point theorem and applications in general equilibrium with Carlos Cosentino and Eduardo Llamoca.

Lecture notes in Optimal Transport: Entropic Regularization and Applications to Economics and Finance with Carlos Cosentino and supervised by Johel Beltrán.

Lecture notes in Econometrics: with Juan L. Jara.

Books

Awards, & achievements

2018	**Mention d'excellence au BAC, top mark 19.91/20**, Colegio Franco Peruano, Lima PE	
2019	**Admission to l'X Bachelor Program**, Paris, France	
2020	**Contest initiation to scientific research**, PUCP Lima, PE	*900 s/.*
2021	**Contest initiation to scientific research**, PUCP Lima, PE	*900 s/.*
2022-	**Top 1% Faculty of Sciences and Engineering** , PUCP Lima, PE	

Skills

Programming: Python, Matlab, LaTeX

Languages: Spanish (Native), English (Proficient), French (Proficient).

Research interests

Economic theory. Optimization and convex analysis. Optimal control theory. Quantitative methods applied to economics.

References

1. **Jorge R. Chávez Fuentes.** Professor of the Mathematics Department at Pontificia Universidad Católica del Perú.

2. **Alfredo B. Poirier Schmidt.** Professor of the Mathematics Department at Pontificia Universidad Católica del Perú.

3. **Johel V. Beltrán Ramírez.** Professor of the Mathematics Department at Pontificia Universidad Católica del Perú.

4. **Juan L. Jara Almonte.** Professor of the Economics Department at Pontificia Universidad Católica del Perú and Research Associate at GRADE.