

# DAVID LOWING

## PERSONAL DATA

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NAME: David André Cyril LOWING  
BIRTH: 19 February 1994, Hanoi (Vietnam)  
CITIZENSHIPS: French, British  
ADDRESS: CentraleSupélec, 4 rue Joliot Curie, Gif-sur-Yvette  
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## CURRENT POSITION

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Since may 2023 | **Postdoctoral Researcher**  
Industrial Engineering Research Department, Sustainable Economy Group  
*CentraleSupélec, University of Paris-Saclay, France*  
Funding from the chair “The Economics of Gas” - Fondation MinesParistech

## RESEARCH INTERESTS

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Game Theory – Fair Allocation – Energy/Environmental Economics  
Normative Economics – Public Economics – Explainable AI

## EDUCATION

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2019–2022 | **PhD in Economics**  
Economic Analysis and Theory Group (GATE)  
*University of Lyon Saint-Etienne, France*  
  
Thesis title: “Values for multi-choice cooperative games with applications to sharing the cost of a gas distribution network”  
Financial support: CIFRE contract N°2018/1369 between the ANRT and GRDF.  
Supervisors: Philippe Solal and Stephane Gonzalez  
  
**Thesis committee:**  
-Justin Leroux, *HEC Montréal* (Referee)  
-Josune Albizuri, *Universidad del País Vasco* (Referee)  
-Inés Macho-Stadler, *Universitat Autònoma de Barcelona* (President)  
-Noemí Navarro, *University of Rennes 1* (Examiner)  
-Christophe Agogue, *GRDF* (Industrial advisor)

2016–2018 | **Master in Mathematics**  
*University of Paris 1 Panthéon Sorbonne*  
Track: Mathematical Methods and Models in Economics and Finance (MMMEF)  
Supervisor: Michel Grabisch

2013–2016 | **Bachelor in Mathematics and Bachelor in Economics**  
*University of Paris Saclay*  
Track: Economics and Mathematics double program (ECOM)

## PAST EMPLOYMENT

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2022–2023 | **Postdoctoral Researcher**  
Multi-Agent Laboratory (Prof. Makoto Yokoo's Team)  
*Faculty of Information Science and Systems, University of Kyushu, Japan*

2018–2022 | **Research Engineer**  
Economic and Regulation Department  
*Gaz réseau distribution France (GRDF), ENGIE group, France*

## PUBLISHED PAPERS

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Lowing, D. (2024) Cost allocation in energy distribution networks.  
*Journal of Mathematical Economics*, forthcoming. (CNRS 1, HCERES A)

Lowing, D. (2023) Allocation rules for multi-choice games with a permission tree structure.  
*Annals of Operations Research* vol. 320, 261–291. (CNRS 2, HCERES A)

Lowing, D., Techer, K. (2022) Marginalism, egalitarianism and efficiency in multi-choice games.  
*Social Choice and Welfare* vol. 59, 815–861. (CNRS 1, HCERES A)

Lowing, D., Techer, K. (2022) Priority relations and cooperation with multiple activity levels.  
*Journal of Mathematical Economics* vol. 102740. (CNRS 1, HCERES A)

## WORKING PAPERS

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Abe, T., Lowing, D., Nakada, S. (2023) Fair allocation in hierarchies: a compromise between marginalism and egalitarianism.  
[papers.ssrn.com/sol3/papers.cfm](https://papers.ssrn.com/sol3/papers.cfm)

Lowing, D., Yokoo, M. (2023) Sharing values for multi-choice games: an axiomatic approach.  
[hal.science/hal-04018735](https://hal.science/hal-04018735)

Fryer, D., Lowing, D., Strumke, I., Nguyen, H. (2023) Multi-choice explanations: a new cooperative game structure for XAI.  
[hal.science/hal-04254509](https://hal.science/hal-04254509)

## WORK IN PROGRESS

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Lowing, D., Massol, O. (2023) Individual rationality in joint LNG purchasing.

Jagu Schippers, E. Lowing, D. (2023) Sharing the burden of reducing greenhouse gas emissions.

Lowing, D., Techer, K., Fryer, D. (2023) Toward a consensus on extended Shapley values: characterization and application in XAI.

Lowing, D., Munich, L., Techer, K. (2022) Allocating the common costs of a public service operator: an axiomatic approach.

Lowing, D., Techer, K. (2022) Unifying two viewpoints on marginalism in extended cooperative settings.<sup>1</sup>

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<sup>1</sup>Details and abstracts of all the works in progress can be found [here](#)

## REFEREEING

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International Journal of Game Theory (1), Group Decision and Negotiation (1), Annals of Operations Research (1), Operations Research Letters (1).

## GRANTS AND FUNDING

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Mines Paristech | Post-doctoral contract

Kyushu University | Post-doctoral contract

ANRT and GRDF | CIFRE contract N°2018/1369

## TEACHING

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2023-2024	Tutorial: Introduction to Economic Analysis Master level - Engineering track, CentraleSupélec, University of Paris Saclay
	Course: Game Theory Bachelor level - Engineering track, CentraleSupélec, University of Paris Saclay

## ADMINISTRATIVE DUTY

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2021-2022	Ph.D representative (associate) at the laboratory council GATE, University of Lyon Saint-Etienne.
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## OTHER

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French (Native), English (Fluent), Latex, Python.

## CONFERENCE TALKS

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- 2023 | The 15th Trans-Atlantic Infradays Conference (TAI)  
*CentraleSupélec, Université Paris Saclay, France.*
- The 71st Congress of the French Economic Association (AFSE)  
*SciencesPo Paris, France.*
- The 18th European Meeting on Game Theory (SING)  
*University of Messina, Italy.*
- The 3rd International Conference on the Economics of Gas  
*University of Paris Dauphine, France.*
- 2022 | The 32nd European meeting on operation research (EURO)  
*University of Aalto, Finland.*
- The 17th European meeting on game theory (SING)  
*University of Padova, Italy.*
- The 23rd French meeting on operation research (ROADEF)  
*INSA Lyon, France.*
- The 12th Conference on Economic Design  
*University of Padova, Italy.*
- The 70th Congress of the French Economic Association (AFSE)  
*University of Dijon, France.*
- 2021 | The 31st European meeting on operation research (EURO)  
*University of Athens, Greece.*
- The 16th European meeting on game theory (SING)  
*University of Granada, Spain.*
- Conference on Social Choice and Voting  
*Virginia Tech, USA.*

## INVITED TALKS

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- 2023 | Workshop on Games and Social Choice Theory  
*CRESE, University of Besançon, France.*
- Seminar in Economic Theory  
*CEPS, Ecole Normale Supérieure Saclay, France.*
- Seminar in Games and Social Choice  
*GRANEM, University of Angers, France.*
- Workshop on Games and Experiments  
*WINPEC, University of Waseda, Japan.*
- 2022 | Seminar in Discrete Mathematics and Optimization for Decision  
*CES, University of Paris 1, France.*
- Workshop on Games and Optimization  
*GATE, University of Saint Etienne, France.*
- 2021 | Seminar in Economics  
*CRESE, University of Besançon, France.*

## REFERENCES

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Philippe Solal, Professor of Economics (Doctoral supervisor)  
*University of Saint-Etienne, GATE Lyon Saint-Etienne, UMR CNRS 5824*  
E-mail: [solal@univ-st-etienne.fr](mailto:solal@univ-st-etienne.fr)

Stéphane Gonzalez, Assistant professor of Economics (Doctoral co-supervisor)  
*University of Saint-Etienne, GATE Lyon Saint-Etienne, UMR CNRS 5824*  
E-mail: [stephane.gonzalez@univ-st-etienne.fr](mailto:stephane.gonzalez@univ-st-etienne.fr)

Justin Leroux, Professor of Economics (Ph.D thesis Referee)  
*HEC Montréal, Department of Applied Economics, CIRANO*  
E-mail: [justin.leroux@hec.ca](mailto:justin.leroux@hec.ca)

Makoto Yokoo, Distinguished Professor of Computer Science (Post-doctoral supervisor)  
*Kyushu University, Department of Informatics, Faculty of ISEE*  
E-mail: [yokoo@inf.kyushu-u.ac.jp](mailto:yokoo@inf.kyushu-u.ac.jp)

Olivier Massol, Professor of Economics (Post-doctoral supervisor)  
*IFP School, LGI CentraleSupélec, UCL Research Fellow*  
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