

# Jacob Coreno

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PhD Student, The University of Melbourne

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## Education

- 2019–Present **PhD in Economics**, *The University of Melbourne*  
Advisory committee: Ivan Balbuzanov, Alex Nichifor, Steven Williams
- 2017–2018 **Master of Economics**, *The University of Melbourne*
- 2013–2016 **Bachelor of Commerce (Honours)**, *Deakin University*, Melbourne

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## Academic Visits

- 2023 **Program Associate**, *Simons Laufer Mathematical Sciences Institute (SLMath)*, Berkeley  
Algorithms, Fairness, and Equity Program
- 2018 **Visiting Student**, *Bocconi University*, Milan

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## Publications

Characterizing TTC via Endowments-swapping-proofness and Truncation-proofness (with [Di Feng](#))  
*Forthcoming at Economics Letters*

**Abstract:** In the object reallocation problem introduced by [Shapley and Scarf \(1974\)](#), [Fujinaka and Wakayama \(2018\)](#) showed that Top Trading Cycles (TTC) is the unique rule satisfying *individual rationality*, *strategy-proofness*, and *endowments-swapping-proofness*. We show that the uniqueness remains true if *strategy-proofness* is weakened to *truncation-proofness*.

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## Working Papers

Axiomatic Characterizations of Draft Rules (with [Ivan Balbuzanov](#))  
[arXiv:2204.08300](#)

*Revision requested at the Journal of Economic Theory*

**Abstract:** Drafts are sequential allocation procedures for distributing heterogeneous and indivisible objects among agents subject to some priority order (e.g., allocating players' contract rights to teams in professional sports leagues). Agents report ordinal preferences over objects and bundles are partially ordered by pairwise comparison. We provide a simple characterization of draft rules: they are the only allocation rules which are respectful of a priority (RP), envy-free up to one object (EF1), non-wasteful (NW) and resource monotonic (RM). RP and EF1 are crucial for competitive balance in sports leagues. We also prove three related impossibility theorems showing that the competitive-balance axioms RP and EF1 are generally incompatible with strategy-proofness. However, draft rules satisfy maxmin strategy-proofness. If agents may declare some objects unacceptable, then draft rules are characterized by RP, EF1, NW, and RM, in conjunction with individual rationality and truncation invariance. In a model with variable populations, draft rules are characterized by EF1, EFF, and RM, together with (population) consistency, top-object consistency, and neutrality.

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Some Characterizations of TTC in Multiple-Object Reallocation Problems (with [Di Feng](#))

[arXiv:2404.04822](#)

*An extended abstract appeared in the proceedings of the 7th International Workshop on Matching Under Preferences (MATCH-UP 2024)*

**Abstract:** This paper considers reallocation problems where agents are endowed with multiple indivisible objects and have strict preferences over bundles—a complex issue exemplified by the exchange of shifts among workers at a firm. When agents have lexicographic or responsive preferences, we provide axiomatic characterizations of the *generalized Top Trading Cycles (TTC)* rule based on *individual-good efficiency*, *individual rationality*, the *worst endowment lower bound*, and *truncation-proofness*. Our results yield a new characterization of the TTC rule for the housing market (shapley1974), the special case in which each agent is endowed with a single object. Furthermore, when agents have conditionally lexicographic preferences, we provide a characterization of the *augmented Top Trading Cycles (ATTC)* rule based on *Pareto efficiency*, the *worst endowment lower bound*, and *drop strategy-proofness*. We establish that the conditionally lexicographic domain is a maximal domain on which *Pareto efficiency* coincides with *individual-good efficiency*, highlighting the difficulty in extending our results to more general preference domains.

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Justified Fairness in House Allocation Problems: Two Characterizations of Strategy-proof Mechanisms (with [Di Feng](#))

[arXiv:2407.14101](#)

**Abstract:** We consider the house allocation problems with strict preferences, where monetary transfers are not allowed. We propose two properties in the spirit of justified fairness. Interestingly, together with other well-studied properties (strategy-proofness and non-bossiness), our two new properties identify serial dictatorships and sequential dictatorships, respectively.

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## Scholarships and Awards

### The University of Melbourne

- 2024 FBE Graduate Research Abroad Travelling Scholarship
- 2024 FBE Graduate Research Enhancement Grant
- 2023 FBE Graduate Research Abroad Travelling Scholarship
- 2023 M. A. Bartlett Research Scholarship
- 2018 Melbourne Global Scholars Award

### Deakin University

- 2016 Vice Chancellor's Medal for Recognizing Excellence
- 2016 Vice Chancellor's Prize
- 2016 Australian Bureau of Statistics Prize
- 2015 Alfred Deakin Medal
- 2015 Deakin Business School Prize

## Academic Employment

### Teaching

2017–2024 **Tutor (Teaching Assistant)**, *The University of Melbourne*

- Advanced Microeconomics (ECON40001)
- Competition and Strategy (ECON20005)
- Intermediate Microeconomics (ECON3001)
- Managerial Economics (ECON90015)
- Microeconomics (ECON30010)

2016–2017 **Tutor (Teaching Assistant)**, *Deakin University*, Melbourne

- Economics Principles (MAE101)
- Fundamentals of Finance (MAF101)

### Research

2020–Present **Research Assistant**, *The University of Melbourne*

- Ivan Balbuzanov: “Constrained Random Matching”
- Georgy Artemov: “Matching by Characteristics”

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## Professional Activities

### Academic Presentations (including scheduled talks)

- 2024 Econometric Society Australasia Meeting (Monash, Australia)
- 2024 Economic Theory Festival (UNSW, Australia)
- 2024 Deakin Business School Economics Seminar Series (Deakin, Australia)
- 2024 HEC Lausanne Microeconomics Seminar (Lausanne, Switzerland)
- 2024 MATCH-UP (Oxford, UK)
- 2023 Simons Laufer Mathematical Sciences Institute (Berkeley, USA)
- 2022 Society for the Advancement of Economic Theory (ANU, Australia)

### Reviewer

Games and Economic Behavior

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## References

**Ivan Balbuzanov**, U. Melbourne, [ivan.balbuzanov@unimelb.edu.au](mailto:ivan.balbuzanov@unimelb.edu.au)

**Alexandru Nichifor**, U. Melbourne, [nichifor@unimelb.edu.au](mailto:nichifor@unimelb.edu.au)

**Georgy Artemov**, U. Melbourne, [georgy.artemov@unimelb.edu.au](mailto:georgy.artemov@unimelb.edu.au)