# PHILIP SOLIMINE

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## EXPERIENCE

**Vancouver School of Economics, The University of British Columbia** 2022-
*CIDER Postdoctoral Research and Teaching Fellow*

**Department of Economics, Florida State University** 2017-2022
*Charles & Persis Rockwood Research Fellow*
*L. Charles Hilton Fellow (2020-2022)*

**XS/FS Experimental Social Sciences Laboratory** 2015-2017
*Research Associate*

## EDUCATION

**Florida State University**

**PhD, Economics** 2022
Dissertation: *Economic behavior in dynamic networks*
Committee: Matthew Gentry, Luke Boosey, R. Mark Isaac, Cynthia Yang, Anke Meyer-Baese

**MS, Scientific Computing** 2022
Thesis: *Optimal control for networked metrics*
Committee: Anke Meyer-Baese, Max Gunzburger, Paul Beaumont

**MS, Economics** 2018
**BA, Mathematics** 2016
**BS, Economics** 2016

## RESEARCH

### Working Papers

· **Strategic formation of collaborative networks** (with Luke Boosey) (*submitted*)

Developing econometric tools for estimation and identification of incentives from panel network data. Analyzing the effects of information on collaborative behavior in a laboratory experiment. Applying these techniques to learn about the structure of altruism and reciprocity and their role in collaboration.

### Publications

1. Solimine, P. and Isaac, RM. (2023). Reputation and market structure in experimental platforms. *Journal of Economic Behavior & Organization*, 205, 528-559. Elsevier.

2. Solimine, P. and Meyer-Baese, A. (2022). Input design for the optimal control of networked moments. *Proceedings of the 61st IEEE Conference on Decision and Control (CDC).* 5894-5901. IEEE.

### Pre-Doctoral Publications

3. Dunkle, B., Isaac, RM., and Solimine, P. (2022). The robustness of lemons in experimental markets. *Experimental Law and Economics.* Research in Experimental Economics, Vol. 21, Emerald.

4. Solimine, PC. (2021). Network controllability metrics for corruption research. *Corruption Networks*. Understanding Complex Systems. Springer.

5. Solimine, PC. (2020). Political corruption and the congestion of controllability in social networks. *Applied Network Science* (Vol. 5, p. 23). Springer.

6. Tahmassebi, A., Mohebali, B., Meyer-Baese, L., Solimine, PC., Pinker, K., Meyer-Baese, A. (2019). Determining driver nodes in dynamic signed biological networks. *Proceedings of the SPIE: Smart Biomedical and Physiological Sensor Technology XV* (Vol. 11020, p. 110200A). SPIE.

7. Tahmassebi, A., Mohebali, B., Solimine, PC., Meyer-Baese, U., Pinker, K., Meyer-Baese, A. (2019). Model reduction of structural biological networks by cycle removal. *Proceedings of the SPIE: Smart Biomedical and Physiological Sensor Technology XV*. (Vol. 11020, p. 110200K). SPIE.

### Selected Works in Progress

· **Barriers to entry and dynamic community structure** (with Angelo Mele and Micah Pollak)

Exploring the relationship of playtime and skill dynamics with social network evolution in a popular digital platform. Leveraging a massive dataset of user behavior patterns in a large, dynamic social network. Combining novel estimation tools with machine learning methods to learn social preferences and behavior from panel network data, and conducting counterfactual policy and pricing interventions.

· **Investment incentives in natural gas pipelines** (with Paul Schrimpf)

Analyzing regulatory distortion of investment incentives and market power in networked industries with transmission rights. Investigating the relationship between price regulation and development investment incentives in regulated utilities markets, and particularly the natural gas pipeline network. Understanding how these incentives impact pipeline network resilience, efficiency, and reliability.

· **Viral dynamics and coordinated pricing in digital platforms** (with Matthew Gentry)

Estimating price sensitivities, price dispersion and consumer dynamics on large platform markets. Applying tools from computer vision and data mining to decompose product-level heterogeneity and network effects. Documenting a novel pattern, in which firms can design pricing strategies that use temporary promotions to create lasting demand effects. Developing a structural econometric model to characterize firm pricing strategy in highly competitive oligopolistic platform markets.

· **Regulating adversarial discord in social networks** (with Wei Li and Jesse Perla)

Continuing my line of published work that applies control theoretic methods to social science problems and understanding social network manipulation. Characterizing the incentives of platforms in regulating the spread of misinformation. Developing tools to counter social network manipulation.

## TEACHING

### University of British Columbia

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|---|---|
| ECON 622 Computational Economics (PhD) (instructor) | 2023 |
| ECON 526 Quantitative Economics (MA) (instructor) | 2023 |
| ECON 323 Quantitative Economic Modeling and Data Science (instructor, ×7 sections) | 2022- |

**Florida State University**

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|---|---|
| ECO 4400 Games and Decisions (instructor) | 2020 (online), 2021 |
| ECO 2023 Principles of Microeconomics (instructor) | 2019 |
| ECO 5434 Analysis of Economic Data (MS) (guest instructor) | 2022 |

## AWARDS & GRANTS

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| · Postdoctoral Fellowship, Vancouver School of Economics | 2022- |
| · Charles & Persis Rockwood Doctoral Research Fellowship | 2017-2022 |
| · L. Charles Hilton Center Research Fellowship | 2020-2022 |
| · FSU Open Access Publishing Grant | 2020 |
| · L. Charles Hilton Center Summer Research Fellowship | 2019-2021 |
| · FSU College of Social Sciences and Public Policy Research Support Grant | 2019 |

## PROFESSIONAL SERVICE

### Conference Talks and Presentations

- **2024**: Conference on Network Science in Economics; UBC Sauder Industrial Organization Workshop
- **2023**: International Industrial Organization Conference; UBC Econometrics Group
- **2022**: IEEE Conference on Decision and Control, UBC Econometrics Group (invited); Conference of Network Science in Economics (×2); FSU Computational Xposition; FSU Quantitative Methods Group; FSU Microeconomic Theory Group
- **2021**: Conference of Network Science in Economics; Economic Science Association Job-Market Candidates Seminar; North American Meeting of the Economic Science Association; Networks 2021 (NetSci and Sunbelt); Conference of the Southern Economic Association; FSU Experimental Group
- **2020**: NetSci 2020 (invited); Network Science in Economics; Global Meeting of the Economic Science Association; FSU Computational Xposition; FSU Experimental Group
- **2019**: Caltech Symposium in Honor of Charles R. Plott (invited); Conference of the Southern Economic Association; NetSci 2019; FSU Experimental Group

### Referee

- International Journal of Industrial Organization (×4)
- Journal of Economic Behavior & Organization
- Economics Letters, Economics (open access), Government and Opposition

## SKILLS & TECHNICAL EXPERTISE

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| **Programming Languages** | Python, C/C#/C++, Julia, R, Matlab |
| **Software & Tools** | JAX, TensorFlow, OpenMP, MPI, Unity, Stata, UNIX/Linux<br>Pytorch, Numba, zTree, oTree |
| **Technical Applications** | Machine learning, Structural econometrics, Simulation,<br>High-performance computing, Game & experiment design,<br>System administration, Neurocomputing, Computer vision<br>Artificial intelligence, Reinforcement learning, Optimization |
| **Spoken Languages** | English (Native), German (Working) |

## PROFESSIONAL REFERENCES


**Jesse Perla**
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The University of British Columbia
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