Arthur Novaes de Amorim

Contact Information

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Education

Ph.D. Economics, University of Calgary	2016–2023 (expected)
M.A. Economics, University of Ottawa	2014–2016
B.Mus. Piano, West Virginia University	2010–2014

Work Experience

2019 – 2020 **Infectious Disease Modeler**, Alberta Health Services
• Implemented a machine learning ensemble method for forecasting influenza-like illness activity at hospitals in Alberta. • Developed a Tableau dashboard for visualizing model forecasts. • Quantified healthcare savings due to a mental health peer support program in Edmonton using Geographic Information System (GIS).

2016 **Junior Economist**, Natural Resources Canada
• Maintained a database of national energy savings due to adoption of energy-efficient appliances. • Used econometric methods (bunching estimator) to compute causal estimates of energy savings due to the ENERGY STAR program for household appliances.

2015 **Junior Analyst**, Environment Canada
• Developed an upward feedback online tool for the department's Values & Ethics respectful workplaces initiative. • Wrote a report on respectful workplaces and job satisfaction.

Academic Work

2017 – Present	Research Assistant to Alex Whalley
2018 – 2019	Research Assistant to Lucija Muehlenbachs
2016 – Present	Teaching Assistant (asterisk denotes graduate course): Econometrics I; Econometrics II; Use of Statistics in Economics; Labour Economics*; Microeconomic Theory II*; Econometrics II*; Environmental Economics*

Publications

"Research Universities and Regional Growth." *Forthcoming. KDI/EWC series on Economic Policy.* With Alex Whalley.
• Discuss when and how research universities can be anchor institutions for a local economic development strategy. The paper provides econometric evidence of a positive impact of universities on regional growth by increasing wages and jobs over the medium term.

"A Stacked ensemble method for forecasting influenza-like illness visit volumes at emergency departments." *Plos one, 16*(3), e0241725. With Rob Deardon and Vineet Saini.
• Propose a data-driven stacking method for averaging the contributions of multiple forecasters in an ensemble. Application leverages six years of training data for computing weights that average predictions from linear regression, quantile regression forest, empirical bayes, and ARIMA. Findings show the ensemble outperforms the contributing models in a retrospective analysis conducted in two large emergency departments in Alberta.

Working Papers

"Agricultural Change in the United States: Evidence from the Golden Age of Radio."

• Study the effects of mass media on agricultural productivity by documenting how the introduction of farm radio programming in the early 20^{th} century shaped agriculture in the United States. Results show that regions with higher exposure to farm radio induced by exogenous variation on signal strength due to topography experienced greater medium-run growth in the value of crops and farmland and in crop yields. Further analysis indicates this effect was more pronounced in counties with less market access and lower levels of socioeconomic status.

"Outside Options in the Labor Market: Evidence from Vietnam Draft Avoidance" With Alex Whalley and Shawn Kantor.

• Investigate how scientists' outside options affect their wages and knowledge production. Study shows that the abrupt end of draft deferrals for American graduate students in 1967 sharply changed the outside option of young working male scientists. A triple difference analysis reveals scientist wages are sensitive to outside option changes, but their knowledge production is not.

"Clouded Thoughts: Air Pollution and Cognitive Performance."

• Construct a measure of the cognitive performance of strategy board players using a neural network to benchmark the quality of in-game decisions made by humans. Application conducts an econometric analysis for estimating the impact of particulate matter (PM) pollution on the performance of professional Go players by exploiting shocks in PM exposure induced by dust storms.

Graduate Coursework

- ❑ Labour Economics
- ❑ Environmental Economics
- ❑ International Trade
- ❑ (Structural) Topics in Econometrics
- ❑ Computational (Bayesian) Statistics
- ❑ Economic Development

Relevant Skills

Data science: R (tidyverse, sf, igraph, caret, mlr3, forecast), Python (pandas, scikit-learn, Keras, NLTK), Stata, SAS, Tableau, MATLAB, GAUSS, MS Office, LaTeX

Languages: English(Fluent), Portuguese(Native), French (Can read), Spanish (Can read)

Conferences & Seminars

• Society of Labor Economics Annual Meeting (2021, • CalgaryR (2019) • Canadian Resource and Environmental Economics Association PhD Workshop (2019) • Canadian Economics Association Annual Conference (2019) • University of Calgary

Honors and Awards

2020	Victor Yang Song Teaching Excellence Award ($1000)
2020	Dissertation Prize runner-up ($1000)
2019	James D. Gaisford Best 2nd Year Paper Research Prize ($1000)
2016–2021	Eyes High Doctoral Scholarship (Total value of $150,000)

References

Alex Whalley, Associate Professor
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Lucija Muehlenbachs, Associate Professor
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