Arthur Novaes de Amorim

https://arthuramorim.info

Contact Information

Department of Economics, University of Calgary   +1 (825)365-8478

2500 University Drive, N.W., Calgary, AB, Canada   arthur.novaesdeamori@ucalgary.ca

Personal Details

Citizenship: Brazilian

Languages: Portuguese (native), English (fluent), Spanish (read), French (read), Korean (basic)

Education

Ph.D. Economics, University of Calgary	Expected 08/2023
M.A. Economics, University of Ottawa	2016
B.Mus. Piano, West Virginia University	2014

Technical Skills

Programming: R (tidyverse, sf, igraph, caret, mlr3, forecast), Python (pandas, scikit-learn, Keras, NLTK, currently learning PySpark), Stata, MATLAB, GAUSS

Visualization: Tableau, R Markdown, LaTeX

Work Experience

2017 – Present   **Research Assistant**, University of Calgary
- Performed computationally intensive tasks on distributed computing environments such as AWS and the Compute Canada cluster. • Delivered linkages across large data sets of patents, publications, and scientific personnel using a clustering-based disambiguation routine. • Implemented algorithms for text similarity of historical scientific documents. • Parsed and combined financial records and environmental litigation textual data. • Developed a predictive machine learning model for the seasonal opening/closure dates of ice roads.

2019 – 2021   **Senior Analyst**, Alberta Health Services
- Delivered machine learning ensemble forecasts of flu-like activity at hospitals.
- Designed a Tableau dashboard for visualizing flu activity at hospitals.

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

2015   **Junior Analyst**, Environment Canada
- Wrote policy briefs on respectful workplaces for senior management.

Teaching & Leadership

2016 – Present   **Teaching Assistant**
- Planned and delivered weekly tutorials with exercises supporting materials learned in lectures. Courses include (asterisk denotes graduate course): Econometrics I; Econometrics II; Use of Statistics in Economics; Labour Economics*; Microeconomic Theory II*; Econometrics II*; Environmental Economics*.

2020   **Instructor – Use of Statistics in Economics**, University of Calgary
- Taught economic applications of statistics using R to a class of 55 students.

2017–2019   **VP Academic**, Economics Graduate Association
- Planned a Machine Learning workshop targeting graduate economics students.

Publications

"Research Universities and Regional Growth." *Forthcoming. KDI/EWC series on Economic Policy.* With Alex Whalley.

• We discuss when and how research universities can be anchor institutions for a local economic development strategy. The paper provides econometric evidence and data visualizations 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.

• We propose a data-driven stacking method for averaging contributions of multiple forecasters in an ensemble. We leverages six years of training data and compute ensemble weights for averaging predictions from linear regression, quantile regression forest, Empirical Bayes, and ARIMA. We show the ensemble outperforms contributing models in a retrospective analysis in two Canadian hospitals.

Working Papers

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

• I study the effects of mass media on agricultural productivity using the introduction of farm radio programming in the early 20th century US. I compile a novel data set by parsing digitized historical radio documents with optical character recognition software and use a Python implementation of a radio propagation model to show that regions with higher exposure to farm radio due to favourable topography experienced greater medium-run growth in farm land value and crop yields.

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

• We investigate how scientists' outside options affect their wages and knowledge production. Using difference-in-differences and a triple differences analysis we show scientist wages are sensitive to outside option changes induced by the end of graduate student draft deferrals during Vietnam War.

"Clouded Thoughts: Air Pollution and Cognitive Performance."

• I measure the cognitive performance of individuals using a neural network to benchmark move quality in a strategy board game setting. I use this measure for estimating the impact of spatial shocks in particulate matter pollution exposure on the performance of professional game players.

Graduate Coursework

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

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)
2016–2022	Eyes High Doctoral Scholarship (Total value of $165,000)

References

Alex Whalley, Associate Professor
Department of Economics, University of Calgary
Phone: (403)220-7143
E-mail: awhalley@gmail.com

Lucija Muehlenbachs, Associate Professor
Department of Economics, University of Calgary
Phone: (403)220-7264
E-mail: lmuehlen@ucalgary.ca

Jean-William Laliberté, Assistant Professor
Department of Economics, University of Calgary
Phone: (403)221-5291
E-mail: jeanwilliam.lalibert@ucalgary.ca