Andrii Babii

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Contact information
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Employment

Associate Professor, Department of Economics, University of North Carolina at Chapel Hill, July 2023 – present.

Assistant Professor, Department of Economics, University of North Carolina at Chapel Hill, July 2017 – June 2023.

Education

Ph.D. Economics, Toulouse School of Economics, 2017. Advisor: Jean-Pierre Florens. Dissertation committee: Timothy Christensen, Jean-Pierre Florens, Eric Gautier, and Ingrid Van Keilegom.

DEEQA (European Diploma for Advanced Quantitative Economics), Toulouse School of Economics, 2014.

M.Sc. Economic Theory and Econometrics, Toulouse School of Economics, 2013.

BA International Relations, Kyiv International University, 2010.

Publications

1. "Econometrics of machine learning methods in economic forecasting", with Eric Ghysels and Jonas Striaukas, in **Handbook of Research Methods and Applications on Macroeconomic Forecasting**, edited by M. Clements and A. Galvao, Edward Elgar Publishing Ltd, 2024 (forthcoming).

2. "Are unobservables separable?", with Jean-Pierre Florens, **Econometric Theory**, 2024 (forthcoming).

3. "High-dimensional Granger causality tests with an application to VIX and news", with Eric Ghysels and Jonas Striaukas, **Journal of Financial Econometrics**, 2024, 22(3), 605–635.

4. Panel data nowcasting: the case of price-earnings ratios, with Ryan T. Ball, Eric Ghysels and Jonas Striaukas, **Journal of Applied Econometrics**, 2024, 39(2), 292–307.

5. "Isotonic regression discontinuity designs", with Rohit Kumar, **Journal of Econometrics**, 2023, 234(2), 371–393.

6. "Machine learning panel data regressions with heavy-tailed dependent data: theory and application", with Ryan T. Ball, Eric Ghysels and Jonas Striaukas, **Journal of Econometrics**, 2023, 237(2).

7. "High-dimensional mixed-frequency IV regression", **Journal of Business & Economic Statistics**, 2022, 40(4), 1470–1483.

8. "Machine learning time series regressions with an application to nowcasting", with Eric Ghysels and Jonas Striaukas, **Journal of Business & Economic Statistics**, 2022, 40(3), 1094–1106.

9. "Honest confidence sets in nonparametric IV regression and other ill-posed models", **Econometric Theory**, 2020, 36(4), 658–706.

10. "ET inteview: Jean-Pierre Florens", joint with Eric Ghysels, **Econometric Theory**, 2020, 36(3), 369–385.

11. "Commercial and residential mortgage defaults: spatial dependence with frailty", with Xi Chen and Eric Ghysels, **Journal of Econometrics**, 2019, 212(1), 47–77.

Working Papers

1. Functional partial least-squares: optimal rates and adaptation, joint with Marine Carrasco and Idriss Tsafack, 2024.

2. "Binary choice with asymmetric loss in a data-rich environment: theory and an application to racial justice", with Xi Chen, Eric Ghysels, and Rohit Kumar, 2024, R&R.

3. "Is completeness necessary? Estimation in nonidentified linear models", with Jean-Pierre Florens, 2024, R&R.

4. "Tensor PCA for factor models", with Eric Ghysels and Junsu Pan, 2024, R&R.

5. "Nowcasting and aggregation: the case of EU output", with Luca Barbaglia, Eric Ghysels, and Jonas Striaukas, 2024.

Work in Progress

1. "Regularized estimation of semiparametric mixtures", with Marine Carrasco and Xiaohong Chen, 2024.

2. "Targeting discounts: the case of airlines", with Alex Marsh, Garrett Scott, and Jonathan Williams, 2023.

3. "Macroeconomic determinants of realized volatility: a machine learning approach", with Thomas Walther, 2024.

Awards and Honors

2024 NSF Grant, joint with Jon Williams (UNC) and Garrett Scott (Ole Miss), $565,127.

2022 Research Award, Economics Department – UNC Chapel Hill.

2020 SoFiE Summer School Lectures, University of Chicago.

2020 SoFiE Summer School Lectures, NYU Shanghai.

2020 Research Award, Economics Department – UNC Chapel Hill.

2018 Jae-Yeong Song and Chunuk Park Award for Excellence in Graduate Teaching.

2015 5th Lindau Meeting on Economic Sciences.

2012 Jean-Jacques Laffont Foundation's Scholarship.

2012 Google Summer of Code scholarship.

Dissertation Committees

Advisor or Co-Advisor

1. Daniel Coutinho, in progress.
2. Jiaxi Li (with Eric Ghysels), in progress.
3. Junsu Park (with Eric Ghysels). Thesis: "Econometric analysis of tensor data". Initial employment: American Express (2024).
4. Jonas Striaukas (with Eric Ghysels). Thesis: "Estimation and inference for high dimensional time series data models". Initial employment: Copenhagen Business School (2022).

Committee Member

Xinglin Li (in progress), Tianqi Li (in progress), Alex Marsh (in progress), Tian Zhao (SAS, 2024), Yanru Lee (Hoover Institution), Yiyao Luo (University of Mississippi, 2023), Yan Qian (Central University of Finance and Economics, 2023), Kim Chan (Korea Information Society Development Institute, 2023), Dejong Andrew (Deloitte, 2022), Haque Sharjil (Federal Reserve Board, 2022), Steve Raymond (cofounder & CFO Split Technologies, 2020), Anessa Custovic (Cardinal Retirement Planning, 2020), Jay Dennis (Institute for Defense Analyses, 2019), Jose Alfonso Campillo Garcia (Freddie Mac, 2018).

Undergraduate Students

1. Davyd Voloshyn (2024). Topic: "Forecasting Market Volatility Using Daily Aspect-Based Macroeconomic Sentiment and Recent Advances in NLP".
2. Dheya Madhani (2024). Topic: "Climate Factors and Gestational Age".
3. Yi Niu (2023). Topic: "Synthetic Control Method and LASSO under Staggered Adoption with Dynamic Treatment Effect".
4. Sarah Larino (best thesis award, 2023). Topic: "Embracing Nonlinearities:Further Exploring Machine Learning Applications to Inflation Forecasting".
5. Larry Li (2021). Topic: "High-dimensional Portfolio Choice using Graphical Lasso".
6. Katerina Wu (2020). Topic: "Contract Curses: Do Long Term Guaranteed Contracts Affect Player Performance in the National Hockey League?".

Teaching Activities

Econ 573: Big Data and Machine Learning in Econometrics (undergraduate), UNC, 2020-2024.

Econ 570: Applied Econometric Analysis (undergraduate), UNC, 2018-2019.

Econ 771: Introduction to Econometric Theory (graduate), UNC, 2018-2024.

Econ 970: Econometrics workshop (graduate), UNC, 2018-2019 and 2022-2023.

TA for Intermediate Econometrics (undergraduate), Econometrics I (graduate), and Econometrics II (graduate), Toulouse School of Economics, 2014-2016.

Professional Service

Internal

Graduate Committee, 2023-2025.

Recruitment Committee, 2022-2023.

Faculty Advisor for Econ Games, 2022.

Social Sciences Committee on Undergraduate Data Science, 2021-2022.

Ph.D. Written Examination Committee in Econometrics, 2018-2025.

Econometrics Seminar Co-organizer, 2019-2025.

Placement committee, 2017-2018.

External

Editorial: Associate Editor at *Econometric Reviews*.

Referring: Econometrica, Journal of Econometrics, Quantitative Economics, Journal of Applied Econometrics, Journal of Business & Economic Statistics, Econometric Theory, Management Science, Journal of Financial Econometrics, International Journal of Forecasting, Journal of Multivariate Analysis, Electronic Journal of Statistics, Journal of Nonparametric Statistics, Econometric Reviews, ERC Grants.

Program committees: 2024 CFE-CMStatistics, 2020 World Congress of Econometric Society, AI Innovations Forum (joint with Kenan Institute and SAS).

Seminars and Conferences

2024 Conference in Honor of Eric Ghysels (University of Montreal), CEU Vienna, University of Connecticut, University of Kansas, Econometrics in Rio, NY Camp, Triangle Econometrics Conference, SEA 94th Annual Meeting (Washington DC), CFE-CMStatistics (King's College, London, UK), Midwest Econometrics Group (Lexington, KY).

2023 Université de Montréal, Simon Fraser University, Rutgers University, Universidad Carlos III de Madrid, National University of Singapore, Singapore Management University, University of Notre Dame (Econometrics Workshop), VTSS Seminar, Meeting of the Midwest Econometrics Group (Cleveland, OH), SEA 93rd Annual Meeting (New Orleans, LA), CFE 2023 (HTW Berlin).

2022: University of Pennsylvania, Brown University, Boston University, University at Albany, 2022 NBER Young Econometricians Conference, AEA/ASSA Annual Meeting (presenter + discussant), UC Riverside, UNC Wilmington, University of Rochester (Conference in Econometrics), Toulouse School of Economics (Conference on Estimation and Inference in Econometric Models).

2021: AEA/ASSA Annual Meeting, Yale University, Humboldt University of Berlin, University of Connecticut, University of Amsterdam (Data Science and Machine Learning workshop), NC State University (Embedding AI in Society Symposium), University of Bristol (Econometrics Study Group), European Commission (Big Data and Economic Forecasting), New York Camp Econometrics XV, 26th International Panel Data Conference, IAAE Annual Conference, SoFiE Machine Learning Virtual Conference, North American Summer Meeting of the Econometric Society, Asian Meeting of the Econometric Society, China Meeting of the Econometric Society, Australasia Meeting of the Econometric Society, 41st International Symposium on Forecasting, EEA-ESEM 2021, CFE-CMStatistics 2021.

2020: International Association for Applied Econometrics Webinar, World Congress of Econometric Society, Computational and Methodological Statistics.

2019: Vanderbilt University, Duke University, University of Chicago (Big Data and Machine Learning in Econometrics, Finance, and Statistics), Toulouse School of Economics (Financial Econometrics Conference), Triangle Econometrics Conference (Durham, NC), AI Innovations Forum (UNC Kenan Institute/SAS), Midwest Econometrics Conference (Columbus, OH), 72nd European Meeting of the Econometric Society (Manchester, UK), Econometric Study Group Annual Conference (Bristol, UK), North American Summer Meeting of the Econometric Society (Seattle, WA).

2018: UNC Kenan-Flagler Business School, Bristol University (Econometric Study Group Annual Conference), Toulouse School of Economics, 4th ISNPS Conference (Salerno, Italy), North American Summer Meeting of the Econometric Society (Davis, CA), 71st European Meetings of Econometric Society (Cologne, Germany), Midwest Econometrics Conference (Madison, WI), Triangle Econometrics Conference (Durham, NC).

2017: Duke University, Université de Montréal, University of North Carolina at Chapel Hill, Toulouse School of Economics, Triangle Econometrics Conference (Durham, NC).

2016: 27th $(EC)^2$ Conference on Big Data (Toulouse, France), European Winter Meeting of the Econometric Society (Edinburgh, UK), 69th Econometric Society European Meetings (Genève, Switzerland), Recent Advances in Econometrics (Toulouse, France), 3rd conference of the International Society for Non-Parametric Statistics (Avignon, France), 48èmes Journées de Statistique de la SFdS (Montpellier, France).

2015: Northwestern University (Conference on Inverse Problems in Econometrics), Tilburg University (ENTER seminar).

2014: Harvard University (SoFiE Financial Econometrics Summer School), Oxford University (SoFiE Financial Econometrics Summer School).

Other Experience

RA to Prof. Eric Gautier, Summer-Fall 2015.

R project for statistical computing, Student Developer, 2012.

Unilever Ukraine, Trainee, Kyiv, Ukraine, 2009.

Institute of Society Transformation, Intern, Kyiv Ukraine, 2008.