SUJOY UPADHYAY

(312) 792-9422 ◇ supadh7@uic.edu ◇ personal website

EDUCATION

University of Illinois Chicago, Ph.D. Economics — *August 2020–Expected Spring 2027*
University of Illinois Chicago, M.S. Finance — *January 2019–August 2020*
Madras School of Economics, M.A. Economics — *August 2016–May 2018*
Ramakrishna Mission Vidyamandira, B.Sc. Economics — *August 2013–May 2016*

RESEARCH INTERESTS

Primary: Applied Econometrics, Political Economy, Development Economics
Secondary: Public Economics, Applied Macroeconomics

WORKING PAPERS

1. "The Downside of Winning: Parliamentary Victories and Subsequent State Elections" *(Job Market Paper)*

Examines how narrowly winning a parliamentary seat affects a party's subsequent state-election performance. Constructs a geographically linked electoral dataset and exploits close parliamentary races in a regression discontinuity design. In the sample restricted to state elections held after the national result, parliamentary victory reduces subsequent state assembly seat share by approximately 8 percentage points ($p < 0.01$), without a statistically detectable effect on aggregate vote share. Robustness checks and segment-level simulations examine electoral timing and nonlinear vote-to-seat conversion.

2. "Does Vertical Political Alignment Impact Local Economic Growth? Evidence using Night-Lights from India"

Studies whether representation by the same political party at national and state levels affects local economic development. Uses close state assembly elections from 1999 to 2013 in a regression discontinuity design, linking electoral data to satellite night-lights and road construction. Estimated effects on night-lights growth are small and statistically indistinguishable from zero across bandwidths and specifications, with similarly null results for roads.

3. "New-Age Pension Reforms and Household Consumption: Evidence from India"

Evaluates India's 2004 transition from defined-benefit to defined-contribution civil-service pensions using National Sample Survey data from 1994 to 2012. A difference-in-differences design compares affected and unaffected households and estimates an approximately 27 percent decline in real monthly per-capita consumption among treated households. Examines robustness to alternative specifications and sample definitions.

4. "Can Aggregate Special Items Aid in Predicting Future Inflation?" (with Arthur Pellenq)

Evaluates whether incorporating special items improves inflation forecasts in Phillips Curve models. Finds no improvement in forecasting performance, while special items used as a measure of economic slack perform comparably to conventional indicators.

RESEARCH AND PROFESSIONAL EXPERIENCE

1. Chicago Fire FC — *June 2026–August 2026*

Data Science Intern

- Developed the club's first goalkeeper performance forecasting model using 11,170 goalkeeper-seasons across 80 leagues; engineered shot-stopping and sweeping measures from Hudl StatsBomb event data.
- Compared Bayesian hierarchical, adaptive shrinkage, and baseline models across six seasonal evaluation folds. Adaptive shrinkage reduced mean absolute error by 22.5% relative to last-season predictions and achieved the lowest error in every fold.
- Built uncertainty-aware Bayesian rankings of 1,492 goalkeepers; combined performance estimates with market values to produce recruitment shortlists under configurable budget constraints.
- Built Python, SQL, PySpark, and Databricks pipelines for validated features and automated player scores; worked with analysts and recruitment stakeholders to integrate results into Pond, the club's internal decision platform.

2. Parts Town LLC *May 2025–August 2025*

Data Science Intern

- Designed and evaluated a randomized workforce intervention covering 3,000+ technicians, including outcome definitions, power analysis, and treatment-control comparability checks; measured a 7% reduction in voluntary turnover relative to control.
- Applied propensity score matching, regression, and double machine learning to study the impact of overtime work assignment on technician attrition; translated results into recommendations for overtime allocation and retention.
- Developed machine learning models, including XGBoost and decision trees, to predict attrition risk and inform workforce retention strategies.

3. UI Health, Vitality Lab *January 2025–May 2026*

Graduate Research Assistant

- Applied difference-in-differences, matching, and instrumental-variable methods to observational healthcare data; evaluated identification assumptions and documented bias, uncertainty, and model limitations.
- Built transformer-based NLP and data-extraction pipelines across 1,000+ oncology studies, reducing manual abstraction time by 60% and supporting reproducible evidence synthesis.

4. Anheuser-Busch InBev *June 2018–December 2018*

Associate Data Scientist

- Estimated marketing mix models for Budweiser's $1B+ U.S. media portfolio, incorporating sales, media, pricing, promotions, seasonality, and competitive activity to evaluate channel contributions and resource allocation.
- Developed and backtested ARIMA, STL, and unobserved-components forecasts for consumer demand, reducing mean absolute percentage error by 13%.
- Estimated demand elasticities for premium products to inform pricing and revenue optimization decisions.

TEACHING EXPERIENCE

University of Illinois Chicago

Graduate Instructor

1. ECON 300: Econometrics *Spring 2023, Spring 2024, Fall 2024, Spring 2025*
2. ECON 330: Government and Business *Fall 2023*

- Taught regression, statistical inference, and causal identification to undergraduate students through applied examples and interpretation of empirical results.

Graduate Teaching Assistant

3. ECON 300: Econometrics *Fall 2025*
4. ECON 221: Macroeconomics – Theory & Applications *Fall 2022*
5. ECON 120: Principles of Microeconomics *Fall 2020, Spring 2021, Spring 2026*
6. ECON 121: Principles of Macroeconomics *Fall 2021, Spring 2022, Fall 2026*

- Held office hours and led discussion sessions for undergraduate economics courses, including ECON 120 and ECON 121, explaining economic concepts, guiding problem-solving, and answering student questions.

POSTERS AND PRESENTATIONS

1. Illinois Economics Association, DePaul University *Fall 2025*
2. Economics Research Luncheon, University of Illinois Chicago *Fall 2025*
3. Dr. Gary Kruh Cancer Research Symposium and Poster Competition, UI Health *Spring 2025*
4. CITD International Conference, Jawaharlal Nehru University *Spring 2024*
5. Economics Research Luncheon, University of Illinois Chicago *Fall 2023*
6. Economics Research Luncheon, University of Illinois Chicago *Spring 2023*

AWARDS AND HONORS

1. UIC Graduate Student Council Travel Award *Spring 2024*

Competitive travel grant to support conference presentation ($500).

2. UIC Economics Department Travel Award *Spring 2024*

Competitive travel grant to support conference presentation ($350).

TECHNICAL SKILLS

Econometric Methods	Regression discontinuity, difference-in-differences, instrumental variables, matching, double machine learning, experimental design, power analysis, demand estimation, marketing mix modeling.
Statistical Modeling	Bayesian hierarchical models, shrinkage estimation, machine learning, time-series forecasting, out-of-sample validation, uncertainty quantification.
Programming	Python, SQL, R, Stata, MATLAB; pandas, NumPy, scikit-learn, PyMC, PySpark.
Data and Reporting	Databricks, AWS, Git, Tableau, Excel, LaTeX.
Languages	Bengali (native), Hindi (fluent), English (fluent).

REFERENCES

Ben Ost (Chair)
Associate Professor of Economics
Department of Economics, UIC
bost@uic.edu
(312) 996-3913

Darren Lubotsky
Associate Professor of Economics
Department of Economics, UIC
lubotsky@uic.edu
(312) 996-6240

George Karras
Professor of Economics
Department of Economics, UIC
gkarras@uic.edu
(312) 996-2321

Javaeria Qureshi
Associate Professor of Economics
Department of Economics, UIC
javaeria@uic.edu
(312) 355-3216