VICTOR CHERNOZHUKOV
Ford International Professor
Department of Economics + Center for Statistics and Data Science
Massachusetts Institute of Technology

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E-mail: vchern at mit.edu.
Web: victorchernozhukov.com
Book: causalml-book.org
Scholar Profile: V. Chernozhukov

EDUCATION

Stanford University, Ph.D. Economics, 2000. Dissertation: Conditional Extremes and Near-Extremes: Concepts, Inference, and Economic Applications. Committee: T. Amemiya, P. Bajari, T. MaCurdy.
University of Illinois at Urbana-Champaign, M.S. Statistics, 1997

CURRENT ACADEMIC POSITIONS

Massachusetts Institute of Technology, Department of Economics & Center for Statistics and Data Science, Professor, 2008-present;
University College London, Honorary Professor and CEMMAP Fellow; since 2023.

PREVIOUS ACADEMIC POSITIONS

University of Chicago, Department of Economics, Visiting Associate Professor, Spring 2007
Massachusetts Institute of Technology, Department of Economics, Associate Professor (with tenure), 2005-2008
Massachusetts Institute of Technology, Department of Economics, Assistant Professor, 2000-2005

ACADEMIC SERVICE

Inaugural Moderator of the Economics (Econometrics) ArXiv (launch September 2017). Co-initiated the launch of the Economics section of Arxiv and was elected to serve as its inaugural moderator.
Co-author of the Dual Ph.D. degree in Statistics + X at MIT — new Interdisciplinary Ph.D. program by the MIT's Institute for Data, Systems, and Society and Departments of Economics, Mathematics, Political Science, and others;
Co-author of the new B.S. degree 6-14 in Computer Science, Economics, and Data Science at MIT;
Co-author of the Minor in Statistics for B.S. degree candidates at MIT.
Co-organizer and co-founder of the MIT Stochastics and Statistics Seminar.
Co-adviser to Doctoral and Post-Doctoral Scholars. Christian Hansen, Allen Ferrell, Ivan Fernandez-Val, Alfred Galichon, Alexandre Belloni, Konrad Menzel, Igor Makarov, Mathew Harding, Oleg Rytchkov, Moshe Cohen, Paul Schrimpf, Arun Chandraksekhar, Denis Chetverikov, Blaise Melly, Kengo Kato, Kaspar Wuthrich, Tetsuya Kaji, Vira Semenova, Yaroslav Mukhin, Mert Demirer, Rahul Singh, Suhas Vijakumar, Victor Quintez-Martinez, Sylvia Klosin.
Co-Author of the Online Professional Education Class at the MIT xPro platform: "Data Science: Data to Insights," 2015-present
Instructor in Summer and Short Courses on ``Machine Learning for Causal and Structural Inference", NBER, St. Gallen, Ljubljana University, The Swiss Bank Study Center at Gerzensee , Georgetown University, CEMMAP

Co-Editor for Econometrics Journal; Economic Theory; Econometric Theory (past).
Co-Author of a new editorial policy for Econometrics Journal, meant to have papers focusing on key ideas, while dramatically shortening the submission-to-publication times.

INDUSTRY SERVICE

Amazon. Com (Core Artificial Intelligence); Senior Principal Scientist; 2018-2020; Amazon Scholar since 2020
Amazon. Com (Central Economics); Independent Consultant on Data Analytics, 2015-2018
The State Street Corporation (Operational Risk Division); Independent Consultant, 2009-2012;

AWARDS, HONORS, GRANTS

Inaugural Sir David Cox Lecture, Institute of Mathematical Statistics and Bernoulli World Congress, 2024.
Fisher-Shultz Lecture, Econometric Society, 2019.
Bessel Award, Humboldt Foundation, Awarded in 2018.
Fellow of the Institute of Mathematical Statistics, 2019; "for pathbreaking contributions to high-dimensional statistics".
American Academy of Arts and Sciences, Fellow, Elected in 2016.
E.J. Hannan Lecture, The Australasian Econometric Society Meeting, 2016
Best Graduate Teacher, MIT Economics Department, Elected by Economics Graduate Student Association, 2015.
Inaugural Cowles Foundation Lecture, North American Econometric Society Meeting, 2009
Fellow of the Econometric Society, Elected in 2009
International Fellow, University College London, CEMMAP, 2009-present
Alfred P. Sloan Research Fellowship, 2005-2007
Castle-Krob Career Development Chair, 2004-2007
Arnold Zellner Award, 2005;
Selection Committee: D. Andrews, B. Hansen, G. Koop, and A. Lewbel.
Alfred P. Sloan Doctoral Dissertation Fellowship, 1999-2000
American Collegiate Consortium Scholarship, 1993-1994
National Science Foundation, 2002-2018

RESEARCH

I. **Causal Inference with High-Dimensional Data Using Machine Learning and Artificial Intelligence.** Modeling, estimation, and inference with high-dimensional data in economics focus on program evaluation and causal inference using modern statistical methods, also known as machine learning. Empirical work includes demand analysis utilizing ML and AI, hedonic price models employing AI, examining the effects of guns on homicide rates, and analyzing the impact of masking and other policies on COVID-19 infection rates.

II. **Moment Inequalities, Partial Identification, Set Estimation.** Set identification analysis, estimation, and inference in partially identified models, especially moment inequality models. Empirical application: inference on Hansen-Jaganathan sets in finance; reexamining racial and gender wage gaps using bounds analysis.

III. **Quasi-Bayesian Estimation.** A computationally attractive alternative to the extremum estimation in structural econometric models. Computational complexity analysis. Sandwich formulas to correct Bayesian inference.

IV. **Shape Restrictions in Econometric Models.** Exploiting shape restrictions to improve estimation and inference on structural functions, including conditional and structural quantile functions, growth curves, and Edgeworth and Cornish-Fisher expansions.

V. **Extremes and Nonstandard Models.** Model and inference for extreme and near-extreme conditional quantiles. Applications to market and birthweight risks. Estimation and inference in models of equilibrium search, standard auction models, and production frontiers.

BOOKS

Handbook of Quantile Regression;
with R. Koenker et. al.; 2017;
CRC Press.

Applied Causal Inference Powered by ML and AI;
with. C. Hansen, N. Kallus, M. Spindler and V. Syrgakanis;
causalml-book.org

Adventures in Introductory Econometrics,
with D. Chetverikov, I. Fernandez-Val, W. Newey;
draft

PAPERS (papers dated after 2007 or so are all available via ARXIV.ORG)

1. "Conditional Value-at-Risk: Aspects of Modeling and Estimation"
with L. Umantsev;
Empirical Economics, 2001, Vol. 26, pp. 271–293
2. "Three-Step Censored Quantile Regression and Extramarital Affairs"
with H. Hong;
Journal of the American Statistical Association, 2002, Vol. 97, No. 459, pp. 872–882
3. "An MCMC Approach to Classical Estimation" with H. Hong; **Journal of Econometrics,** 2003, Vol. 115, No. 2, pp. 293–346
Awarded the 2005 Biannual Arnold Zellner Award.
Selection Committee: D. Andrews, B. Hansen, G. Koop, and A. Lewbel.
4. "Likelihood Inference in a Class of Non-Regular Econometric Models,"
with H. Hong,
Econometrica, vol.72 (2), pp. 1445-1480, 2004.
5. "The Impact of 401(k) Participation on the Wealth Distribution: An Instrumental Quantile Regression Analysis"
with C. Hansen
The Review of Economics and Statistics, 2004, Vol. 86, No. 3, pp. 735–751
6. "An Instrumental Variable Model of Quantile Treatment Effects"
with C. Hansen
Econometrica, 2005, Vol. 73, No. 1, pp. 245–261
7. Extremal Quantile Regression"
The Annals of Statistics, 2005, Vol. 33, No. 2, pp. 806–839
8. "Subsampling Inference on Quantile Regression Processes (with an Application to a Re-employment Experiment)"
with I. Fernández-Val
Sankhyā: The Indian Journal of Statistics, 2005, Vol. 67, No. 2, pp. 253–276

9. "Inference on Instrumental Quantile Processes for Structural and Treatment Effect Models"
with C. Hansen
Journal of Econometrics, 2006, Vol. 132, No. 2, pp. 491–525
10. "Quantile Regression under Misspecification and the U.S. Wage Structure"
with J. Angrist and I. Fernández-Val
Econometrica, 2006, Vol. 74, No. 2, pp. 539–563
11. "Estimation and Inference on Parameter Sets in Econometric Models"
with H. Hong and E. Tamer
Econometrica, 2007, Vol. 75, No. 5, pp. 1243–1284
12. "Extremal Quantiles and Value-at-Risk"
with Songzi Du
The New Palgrave Dictionary of Economics, 2008
13. "Instrumental Variable Identification and Estimation of Non-separable Models"
with G. Imbens and W. Newey
Journal of Econometrics, 2007, Vol. 139, No. 1, pp. 4–29
14. "The Reduced Form: A Simple Approach to Inference with Weak Instruments"
with C. Hansen
Economics Letters, 2007, Vol. 95, No. 2, pp. 241–246
15. "Instrumental Quantile Regression: A Robust Inference Approach"
with C. Hansen
Journal of Econometrics, 2008, Vol. 142, No. 1, pp. 379–398
16. "Finite-Sample Inference in Quantile Regression Models"
with C. Hansen and M. Jansson
Journal of Econometrics, 2009, Vol. 152, No. 2, pp. 93–103
17. "Admissible Tests for Instrumental Regression"
with C. Hansen and M. Jansson
Econometric Theory, 2007, Vol. 23, No. 2, pp. 312–334
18. "Computational Complexity of MCMC-Based Estimators in Large Samples"
with A. Belloni
The Annals of Statistics, 2009, Vol. 37, No. 4, pp. 2011–2055
19. "Improving Point and Interval Estimators of Monotonic Functions by Rearrangement"
with I. Fernández-Val and A. Galichon
Biometrika, 2009, Vol. 96, No. 3, pp. 559–575
20. "Quantile and Probability Curves without Crossing"
with I. Fernández-Val and A. Galichon
Econometrica, 2010, Vol. 78, No. 3, pp. 1093–1125
21. "Rearranging Edgeworth-Cornish-Fisher Expansions"
with I. Fernández-Val and A. Galichon
Economic Theory, 2010, Vol. 42, No. 2, pp. 247–268
22. "Sensitivity and Set-Identification Analysis of the Regression Model with Tobin Regressors"
with T. Stoker and R. Rigobon
Quantitative Economics, 2010, Vol. 1, No. 2, pp. 365–396
23. "Inference for Extremal Quantile Regression Models, with an Application to Market and Birthweight Risks"
with I. Fernández-Val
The Review of Economic Studies, 2011, Vol. 78, No. 2, pp. 559–589
24. "L1-Penalized Quantile Regression in High-Dimensional Sparse Models"
with A. Belloni
The Annals of Statistics, 2011, Vol. 39, No. 1, pp. 82–130
25. "High-Dimensional Sparse Econometric Models: An Introduction"
with A. Belloni
Springer Lecture Notes, 2011

26."Square Root Lasso: Pivotal Recovery of Sparse Functions via Conic Programming"
with A. Belloni and L. Wang
Biometrika, 2011, Vol. 98, No. 4, pp. 791–806
27."Sparse Models and Methods for Instrumental Regression with Application to Eminent Domain"
with A. Belloni, C. Hansen, and D. Chen
Econometrica, 2012, Vol. 80, No. 6, pp. 2369–2429
28."Intersection Bounds: Estimation and Inference"
with S. Lee and A. Rosen
Econometrica, 2013, Vol. 81, No. 3, pp. 667–737
29."Average and Quantile Effects in Nonlinear Panel Data Models"
with J. Hahn, I. Fernández-Val, and W. Newey
Econometrica, 2013, Vol. 81, No. 6, pp. 3049–3083
30."Least Squares after Model Selection in High-Dimensional Linear Regression Model"
with A. Belloni
Bernoulli, 2013, Vol. 19, No. 2, pp. 521–547
31."Inference Methods for High-Dimensional Sparse Econometric Models"
with A. Belloni and C. Hansen
Advances in Economics and Econometrics, 2013, Vol. 3, pp. 245–295
32.Quantile Models with Endogeneity"
with C. Hansen
Annual Review of Economics, 2013, Vol. 5, pp. 57–81
33."Inference on Counterfactual Distributions"
with I. Fernández-Val and B. Melly
Econometrica, 2013, Vol. 81, No. 6, pp. 2205–2268
34."Gaussian Approximations and Gaussian Multiplier Bootstrap for Maxima of Sums of High-Dimensional Random Vectors"
with D. Chetverikov and K. Kato
Annals of Statistics, 2013, Vol. 41, No. 6, pp. 2786–2819
35."Identification in Semiparametric and Nonparametric Conditional Moment Models"
with X. Chen, S. Lee, and W. Newey
Econometrica, 2014, Vol. 82, No. 2, pp. 765–809
36."Comparison and Anti-Concentration Bounds for Maxima of Gaussian Vectors"
with D. Chetverikov and K. Kato
Probability Theory and Related Fields, 2015, Vol. 162, No. 1–2, pp. 47–70
37."Inference on Treatment Effects with High-Dimensional Controls, with Application to Abortion and Crime"
with A. Belloni and C. Hansen
The Review of Economic Studies, 2014, Vol. 81, No. 2, pp. 608–650
38."Posterior Inference in Curved Exponential Families under Increasing Dimension"
with A. Belloni
Econometrics Journal, 2014, Vol. 17, No. 2, pp. S1–S26
39."Pivotal Estimation via Square-Root Lasso in Non-parametric Regression"
with A. Belloni and L. Wang
Annals of Statistics, 2014, Vol. 42, No. 2, pp. 757–788
40."Inference on Structural and Treatment Effects with High-Dimensional Data"
with A. Belloni and C. Hansen
Journal of Economic Perspectives, 2014, Vol. 28, No. 2, pp. 29–50
41."Gaussian Approximation of Suprema of Empirical Processes"
with D. Chetverikov and K. Kato
Annals of Statistics, 2014, Vol. 42, No. 4, pp. 1564–1597
42."Anti-Concentration and Confidence Bands in Nonparametric Problems"
with D. Chetverikov and K. Kato
Annals of Statistics, 2014, Vol. 42, No. 5, pp. 1787–1818

43."Inference on Sets in Finance"
with E. Kokatulum and K. Menzel
Quantitative Economics, 2015, Vol. 6, No. 2, pp. 383–421
44."Quantile Regression under Censoring and Endogeneity"
with I. Fernández-Val and A. Kowalski
Journal of Econometrics, 2015, Vol. 186, No. 1, pp. 201–221
45."Uniform Post-Selection Inference in LAD Regression and Other Z-Estimation Problems"
with A. Belloni and K. Kato
Biometrika, 2014, Vol. 101, No. 4, pp. 749–766
46."Fragility of Asymptotic Agreement under Bayesian Learning"
with D. Acemoglu and M. Yildiz
Theoretical Economics, 2015, Vol. 10, No. 2, pp. 437–476
47."Some New Asymptotic Theory for Least Squares Series Estimators"
with A. Belloni, D. Chetverikov, and K. Kato
Journal of Econometrics, 2015, Vol. 186, No. 2, pp. 345–366
48."Nonparametric Identification in Panels Using Quantiles"
with I. Fernández-Val, W. Newey, et al.
Journal of Econometrics, 2015, Vol. 188, No. 2, pp. 439–456
49."Implementing Intersection Bounds in Stata"
with W. Kim, S. Lee, and A. Rosen
Stata Journal, 2015, Vol. 15, No. 3, pp. 1–21
50."Post-Selection and Post-Regularization Inference in Large Linear Models with Many Controls and Instruments"
with C. Hansen and M. Spindler
American Economic Review, Papers and Proceedings, 2015, Vol. 105, No. 5, pp. 482–486
51."Post-Selection and Post-Regularization Inference: An Elementary, General Approach"
with C. Hansen and M. Spindler
Annual Review of Economics, 2015, Vol. 7, pp. 649–688
52."Censored Quantile Instrumental Variable Estimation with Stata"
with I. Fernández-Val, Sukjin Han, and Amanda Kowalski
The Stata Journal, 2019, Vol. 19, No. 4, pp. 768–781
53."Honest Confidence Regions for High-Dimensional Sparse Generalized Linear Models"
with A. Belloni and W. Ying
Journal of Business and Economic Statistics, 2016, Vol. 34, No. 4, pp. 483–502
54."Inference on Treatment Effects with High-Dimensional Panel Data, with an Application to Gun Control"
with D. Kozbur and C. Hansen
Journal of Business and Economic Statistics, 2016, Vol. 34, No. 4, pp. 535–546
55."Empirical and Gaussian Bootstraps for Suprema of Empirical Processes of Increasing Complexity, and Related Gaussian Couplings"
with D. Chetverikov and K. Kato
Stochastic Processes and Their Applications, 2016, Vol. 126, No. 12, pp. 3721–3757
56."Vector Quantile Regression"
with G. Carlier and A. Galichon
Annals of Statistics, 2016, Vol. 44, No. 3, pp. 1165–1192
57."Program Evaluation with High-Dimensional Data"
with A. Belloni, C. Hansen, and I. Fernández-Val
Econometrica, 2017, Vol. 85, No. 1, pp. 233–298
58."A Lava Attack on the Recovery of Sums of Sparse and Dense Signals"
with C. Hansen and Y. Liao
Annals of Statistics, 2017, Vol. 45, No. 3, pp. 1206–1236

59. "Monge-Kantorovich Depth, Quantiles, and Ranks"
with A. Galichon, M. Hallin, and M. Henry
Annals of Statistics, 2017, Vol. 45, No. 5, pp. 2234–2257
60. "Central Limit Theorems and Bootstrap in High Dimensions"
with D. Chetverikov and K. Kato
Annals of Probability, 2017, Vol. 45, No. 5, pp. 2309–2351
61. "Double/Debiased/Neyman Machine Learning for Treatment Effects"
with Denis Chetverikov, Mert Demirer, Esther Duflo, Christian Hansen, and Whitney Newey
American Economic Review, Papers & Proceedings, 2017, Vol. 107, No. 5, pp. 261–265
62. "Double/De-Biased Machine Learning for Treatment and Causal Parameters"
with Denis Chetverikov, Mert Demirer, Esther Duflo, Christian Hansen, Whitney Newey, and James Robins
Econometrics Journal, 2018
63. "HDM: High-Dimensional Metrics"
with C. Hansen and M. Spindler
The R Journal, 2016, Vol. 8, No. 2, pp. 185–199
64. "Quantreg.nonpar: An R Package for Performing Nonparametric Series Quantile Regression"
with M. Lipsitz, I. Fernández-Val, and A. Belloni
The R Journal, 2017, Vol. 9, No. 2, pp. 305–321
65. "Counterfactual: An R Package for Counterfactual Analysis"
with Mingli Chen, Iván Fernández-Val, and Blaise Melly
The R Journal, 2018, Vol. 10, No. 1, pp. 372–386
66. The Sorted Effects Method: Discovering Heterogeneous Partial Effects Beyond Their Averages
with I. Fernández-Val and Y. Luo
Econometrica, 2018, Vol. 86, No. 4, pp. 1181–1205
67. Inference on Causal and Structural Parameters Using Many Moment Inequalities
with D. Chetverikov and K. Kato
Review of Economic Studies, 2019, Vol. 86, No. 5, pp. 1867–1900
68. Robust Inference in Approximately Sparse Quantile Regression Models
with A. Belloni and K. Kato
Journal of the American Statistical Association, 2019, Vol. 114, No. 527, pp. 1784–1796
69. Uniformly Valid Post-Regularization Confidence Regions for Many Functional Parameters in Z-Estimation Framework
with A. Belloni, V. Chernozhukov, D. Chetverikov, and Y. Wei
Annals of Statistics, 2018, Vol. 46, No. 6A, pp. 3643–3675
70. Vector Quantile Regression Beyond Correct Specification
with G. Carlier and A. Galichon
Journal of Multivariate Analysis, 2018, Vol. 161, pp. 96–102
71. Conditional Quantile Processes Based on Series or Many Regressors (with an Application to Gasoline Demand)
with A. Belloni, D. Chetverikov, and I. Fernández-Val
Journal of Econometrics, 2019, Vol. 213, No. 1, pp. 4–29.
72. "Generic Inference on Quantile and Quantile Effect Functions for Discrete Outcomes"
with Iván Fernández-Val, Blaise Melly, and Kaspar Wüthrich
Journal of the American Statistical Association, 2020, Vol. 115, No. 529, pp. 123–137
73. "Nonseparable Multinomial Choice Models in Cross Section and Panel Data"
with I. Fernández-Val and W. Newey
Journal of Econometrics, 2021
74. "On Cross-Validated Lasso"
with D. Chetverikov and Z. Liao
Annals of Statistics, 2021, Vol. 49, No. 3, pp. 1300–1317

75.“Identification of Hedonic Equilibrium and Nonseparable Simultaneous Equations”
with A. Galichon, M. Henry, and B. Pass
Journal of Political Economy, 2021, Vol. 129, No. 3, pp. 842–870
76."Shape-Enforcing Operators for Point and Interval Estimators"
with Xi Chen, I. Fernández-Val, Scott Kostyshak, and Y. Luo
Journal of Machine Learning Research, 2021, Vol. 22, Paper No. 220, pp. 1–42
77."Network and Panel Quantile Effects via Distribution Regression"
with I. Fernández-Val and M. Weidner
Journal of Econometrics, 2021, Vol. 222, No. 1, pp. 345–366
78."Debiased Machine Learning of Conditional Average Treatment Effects and Other Causal Functions"
with Vira Semenova
The Econometrics Journal, 2021, Vol. 24, Issue 2, pp. 264–289
79."An Exact and Robust Conformal Inference Method for Counterfactual and Synthetic Controls"
with Kaspar Wüthrich and Yinchu Zhu
Journal of the American Statistical Association, 2021, Vol. 116, No. 536, pp. 1849–1864
80."Inference on Heterogeneous Treatment Effects in High-Dimensional Panel Data Models with Weak Dependence"
with V. Semenova, M. Goldman, and M. Taddy
Quantitative Economics, 2013, Vol. 4, No. 2, pp. 197–229
81."Semi-Parametric Estimation of Structural Functions in Nonseparable Triangular Models"
with I. Fernández-Val, W. Newey, S. Stouli, and Francis Vella
Journal of Econometrics, 2020, Vol. 218, No. 2, pp. 758–783
82."Detailed Proof of Nazarov’s Inequality"
with K. Kato and D. Chetverikov
ArXiv Only, 2017, arXiv:1701.07857
83."The Impact of Big Data on Firm Performance: An Empirical Investigation"
with P. Bajari, A. Hortacsu, and J. Suzuki
American Economic Association Papers and Proceedings, 2019, Vol. 109, pp. 33–37
84."Exact and Robust Conformal Inference Methods for Predictive Machine Learning with Dependent Data"
with K. Wüthrich and Y. Zhu
Proceedings of the 31st Conference on Learning Theory (COLT), 2018, pp. 732–751
85."Double/Debiased Machine Learning of Global and Local Functionals with Regularized Riesz Representers"
with W. Newey and R. Singh
The Econometrics Journal, 2022, Vol. 25, Issue 1, pp. 1–24
86."Automatic Debiased Machine Learning of Causal and Structural Effects"
with W. Newey and R. Singh
Econometrica, 2022, Vol. 90, No. 3, pp. 967–1008
87."LASSO-Driven Inference in Time and Space"
with W. Härdle, C. Huang, and W. Wang
The Annals of Statistics, 2021, Vol. 49, No. 3, pp. 1536–1558
88."Optimal Targeted Lockdowns in a Multi-Group SIR Model"
with D. Acemoglu, M. Whinston, and I. Werning
American Economic Review: Insights, 2021, Vol. 3, No. 4, pp. 487–502
89."Vector Quantile Regression and Optimal Transport, from Theory to Numerics"
with G. Carlier, G. De Bee, and A. Galichon
Empirical Economics, 2021, Vol. 61, No. 1, pp. 45–70
90."The Association of Opening K-12 Schools and Colleges with the Spread of COVID-19 in the United States: County-Level Panel Data Analysis"
with H. Kasahara and P. Schrimpf
Proceedings of the National Academy of Sciences, 2021, Vol. 118, No. 42, e2103420118

91."Nearly Optimal Central Limit Theorem and Bootstrap in High Dimensions"
with D. Chetverikov and Yuta Koike
Annals of Applied Probability, 2023, Vol. 33, No. 4, pp. 2345–2377
92."Improved Central Limit Theorem and Bootstrap Approximations in High Dimensions"
with D. Chetverikov, K. Kato, and Y. Koike
Annals of Statistics, 2022, Vol. 50, No. 5, pp. 2921–2957
93."Distributional Conformal Regression"
with K. Wüthrich and Y. Zhu
Proceedings of the National Academy of Sciences, 2021, Vol. 118, No. 48, e2107794118
94."Fast Algorithms for the Quantile Regression Process"
with I. Fernández-Val and B. Melly
Empirical Economics, 2021, Vol. 60, No. 1, pp. 1–31
95."Sorted Effects: Sorted Causal Effects in R"
with S. Chen, I. Fernández-Val, and Y. Luo
R Journal, 2020, Vol. 12, No. 1, pp. 131–148
96."Mastering Panel Metrics: Causal Impact of Democracy on Growth"
with S. Chen and I. Fernández-Val
AEA Papers and Proceedings, 2020, Vol. 110, pp. 77–82
97."Deeply-Debiased Off-Policy Interval Estimation"
with Chengchun Shi, Runzhe Wan, and Rui Song
International Conference on Machine Learning, 2021, Proceedings of Machine Learning Research, Vol. 139, pp. 9580–9591
98."RieszNet and ForestRiesz: Automatic Debiased Machine Learning with Neural Nets and Random Forests"
with W. Newey, V. Syrgkanis, and V. Quintas-Martinez
International Conference on Machine Learning, 2022, Proceedings of Machine Learning Research, Vol. 162, pp. 3901–3914
99.DoubleML—An Object-Oriented Implementation of Double Machine Learning in Python"
with P. Bach, M. Kurz, and M. Spindler
Journal of Machine Learning Research, 2022, Vol. 23, Paper No. 53, pp. 1–6
100."Locally Robust Semi-Parametric Estimation"
with Juan Carlos Escanciano, Hidehiko Ichimura, Whitney K. Newey, and James Robins
Econometrica, 2022, Vol. 90, No. 4, pp. 1501–1535
101."A Simple and General Debiased Machine Learning Theorem with Finite Sample Guarantees"
with W. Newey and R. Singh
Biometrika, 2023, Vol. 110, No. 1, pp. 257–264
102."Uniform Inference in High-Dimensional Gaussian Graphical Models"
with S. Klassen, J. Kück, and M. Spindler
Biometrika, 2023, Vol. 110, No. 1, pp. 51–68
103."High-Dimensional Data Bootstrap"
with Denis Chetverikov, Kengo Kato, and Yuta Koike
Annual Review of Statistics and Its Application, 2023, Vol. 10, pp. 427–449
104."Constrained Moment Conditions Models"
with A. Santos and W. Newey
Econometrica, 2023, Vol. 91, No. 2, pp. 709–736
105."Toward Personalized Inference on Individual Treatment Effects"
with K. Wüthrich and Y. Zhu
Proceedings of the National Academy of Sciences, 2023, Vol. 120, No. 1, e2208373120
106.""Inference for Low-Rank Models"
with Y. Liao, Y. Zhu, and C. Hansen
Annals of Statistics, 2023, Vol. 51, No. 3, pp. 1309–1330

107."DoubleML—An Object-Oriented Implementation of Double Machine Learning in R"
with P. Bach, M. Kurz, and M. Spindler
Journal of Statistical Software, 2024, Vol. 108, Issue 3, pp. 1–56
108."Future-Dependent Value-Based Off-Policy Evaluation in POMDPs"
with M. Uehara, H. Kiyohara, A. Bennett, N. Jiang, N. Kallus, C. Shi, and W. Sun
Advances in Neural Information Processing Systems, 2024, Vol. 36
109."Generic Machine Learning Inference on Heterogeneous Treatment Effects in Randomized Experiments"
with M. Demirer, E. Duflo, and I. Fernández-Val
Econometrica, 2015; forthcoming
110."Distribution Regression with Sample Selection, with an Application to the U.K. Wage Structure"
with I. Fernández-Val and Siyi Luo
Journal of Political Economy, 2025; forthcoming
111."A t-test for Synthetic Controls"
with K. Wüthrich and Y. Zhu
Journal of Political Economy, 2018, R & R.
112."Long Story Short: Omitted Variable Biases in Machine Learned Causal Models"
with C. Cinelli, W. Newey, V. Syrgkanis, and A. Sharma
Review of Economics and Statistics, 2022; revise and resubmit
113."Best Linear Approximations to Set-Identified Functions (with an Application to Gender Wage Gap)"
with A. Chandrasekhar, F. Molinari, and P. Schrimpf
Quantitative Economics, revise and resubmit
114."Hedonic Prices and Quality-Adjusted Price Indices Powered by AI"
with P. Bajari, Z. Cen, M. Manukonda, R. Huerta, et al.
Journal of Economics, R & R; 2021
115."High-Dimensional Econometrics and Regularized GMM"
with A. Belloni, D. Chetverikov, C. Hansen, and K. Kato
Handbook of Econometrics, Vol. 7, Part B, forthcoming
116."Quantile Graphical Models: Prediction and Conditional Independence with Applications to Systemic Risk"
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