Andy Krause

Curriculum Vitae

November 2023

Personal Website: andykrause.com   Github: github/andykrause
Email: andy at andykrause.com   Google Scholar GS/Andy Krause

EDUCATION

2013 **Ph.D. Urban Design and Planning (Interdisciplinary)**, University of Washington
-Dissertation Research: Urban Intensification in Seattle: A Data System, Policy Evaluation and Market Analysis
2004 **M.S. Urban Planning**, University of Arizona
-Thesis: A Cost/Benefit Analysis of Tucson's Historic Preservation Tax Credit
2002 **B.S. Geography**, University of Wisconsin-Stevens Point
-Concentration: Urban Planning and Land Use
-Minor: Geographic Information Systems (GIS)

EMPLOYMENT

Industry Employment

2021 - **Senior Manager, Applied Science**, Zillow
2019 - 21 **Manager, Applied Science**, Zillow
2018 - 19 **Senior Applied Scientist**, Zillow
2017 - 18 **Principal Data Scientist**, Greenfield Advisors
2014 - 15 **Data Scientist** (Consultant), Zillow
2005 - 14 **Senior Analyst**, Greenfield Advisors

Academic Employment

2015 - 17 **Lecturer**, Department of Property, University of Melbourne
2013 - 14 **Post-Doctoral Research Associate**, Runstad Center for Real Estate Studies, University of Washington

PUBLICATIONS, PRESENTATIONS, and RESEARCH

Books

2017 Real Estate Analysis in the Information Age. *with K. Winson-Geideman, C. Lipscomb & N. Evangelopoulos*. Routledge, ISBN-13: 9781138232907.

Peer-Reviewed Publications

2020 Krause, A. and Aschwanden, G. To Airbnb?: Factors impacting short-term leasing preference. *Journal of Real Estate Research, 42(2), 261-284.* Access via DOI

2020 Krause, A., Martin, A. and Fix, M. Uncertainty in Automated Valuation Models: Error- vs Model-Based Approaches. *Journal of Property Research, 37(4), 308-339* Access via DOI

2018 Warren-Myers, G., Aschwanden, G., Fuerst, F., and Krause, A. Estimating the real implications of sea level rise for public and private property ownership, occupation and management. *Risks, 6(2), 37.* Access via DOI

2018 Estiri, H. and A. Krause. A Cohort Location Model of Household Sorting in US Metropolitan Regions. *Urban Studies*, 55(1), 71-90. Access via DOI.

2018 Lipscomb, C., Youtie, J., Shapiro, P., Arora, S. & Krause, A. Evaluating the Impact of Manufacturing Extension Services on Establishment Performance. *Economic Development Quarterly*, 32(1), 29-43. Access via DOI

2017 Winson-Geideman, K., A. Krause, G. Warren-Myers, and H. Wu. Non-spatial Contagion in Real Estate Markets: The Case of Brookland Greens. *Journal of Sustainable Real Estate*, 9(1), 22-45. Access via DOI.

2017 Bitter, C. and A. Krause. The Influence of Urban Design Packages on Home Values. *International Journal of Housing Market Analysis*, 10(2), 184-203. Access via DOI.

2016 Krause, A. and C. Lipscomb. The Data Preparation Process in Real Estate: Guidance and Review, *Journal of Real Estate Practice and Education*, 19(1), 15-42. Access via DOI.

2016 Krause, A. Reproducible Research in Real Estate: A Review and an Example, *Journal of Real Estate Practice and Education*, 19(1), 69-85. Access via DOI.

2015 Sim, E., A. Krause, and K. Winson-Geideman. The Impact of Transit Oriented Development (TOD) on Residential Property Prices: The Case of Box Hill, Melbourne. *Pacific Rim Property Research Journal*, 21(3), 199-214. Access via DOI.

2015 Krause, A. Piece-by-Piece: Low-rise Redevelopment in Seattle, *Journal of Property Research*, 32(3), 258-278. Access via DOI.

2015 Estiri, H, A. Krause & M. Heris. "Phasic" metropolitan settlers: a phase-based model for the distribution of households in US metropolitan regions, *Urban Geography*, 36(5), 777-794. Access via DOI.

2012 Krause, A. & C. Bitter. Spatial Econometrics, Land Values and Sustainability: Trends in Real Estate Valuation, *Cities, Special Issue: Current Research on Cities*, 29(S1), S19-S25. Access via DOI.

2012 Krause, A., R. Throupe, J. Kilpatrick, & W. Spiess. Contaminated Properties, Trespass, and Underground Rents, *Journal of Property Investment & Finance* 30(3), 304-320. Access via DOI.

2011 Krause, A. & M. Kummerow. An Iterative Approach to Minimizing Valuation Errors using an Automated Comparable Sales Model, *Journal of Property Tax Assessment & Administration* 8(2), 39-52.

2007 Kilpatrick, J., J. Carruthers, R. Throupe & A. Krause. The Impact of Transit Corridors on Residential Property Values, *Journal of Real Estate Literature* 29(3), 303-320. Access via DOI

Academic Conference Publications (Peer Reviewed)

2023 Moghimi, F., Johnson, R. and & A. Krause. "Rethinking Real Estate Pricing with Transformer Graph Neural Networks (T-GNN)" *International Conference on Machine Learning and Applications*. Conference Link

2016 Winson-Geideman, K. & A. Krause. "Transformations in Real Estate Research: The Big Data Revolution" *Pacific Rim Real Estate Society Annual Conference*. Proceedings Link

Other Academic Publications

2023 Zabel, J., Phaneur, D. and Krause, A. Introduction to the Special Issue Property Value Analysis using ZTRAX: Applications under the Approaching Sunset, *Journal of Housing Economics, 62, 1051-1377*. Access via DOI

Industry Publications

2016 Krause, A. Winson-Geideman, K. & Warren-Myers, G. Does 'Big Data' offer big potential to the property industry? *Australia and New Zealand Property Journal*, July, 358-363.

Patents

2017 Krause, A. Lipscomb, C. A. & Kilpatrick, J. A. *Automated-valuation-model training-data optimization systems and methods.* U.S. Patent 9,582,819, filed September 26, 2013, and issued February 28, 2017.

Software

2020   Krause, A. *hpiR: An R package for House Price Indexes.* hpiR, Accepted to CRAN, 2018-08-18, Updated 2020-04-04.

2023   Krause, A. *kingCoData: Housing market data for King County, WA: 2000 - 2022.* kingCoData, Last updated 2023-01-15.

Academic Conference Presentations and Panels

2020   (Invited Discussant) "Real Estate Finance and Investment Symposium", Geneva, Switzerland.

2020   (Invited Keynote Speaker) (COVID Canceled) "International Association of Assessing Officer: International Research Symposium", Copenhagen, Denmark.

2019   (Invited Panelist) "National Science Foundation: Sustainable Urban Systems", Dearborn, MI.

2019   "A machine learning approach to House Price Indexes with the 'hpiR' package", American Real Estate Society Annual Meeting, Paradise Valley, AZ.

2019   (Panel)"Big Data and the Future of Real Estate Research, Practice and Education", Panel Member, American Real Estate Society Annual Meeting, Paradise Valley, AZ.

2018   "To Airbnb: A Question of Returns", American Real Estate Society Annual Meeting, Bonita Springs, FL. Co-Authored with Gideon Aschwanden.

2018   (Panel) "Software Tools and Open Data", Panel Host and Member, American Real Estate Society Annual Meeting, Bonita Springs, FL.

2017   "Should I Airbnb My Property?", Real Estate Research Institute Annual Conference, Chicago, IL. Co-Authored with Gideon Aschwanden.

2017   "House Price Indexes for Submarkets: A Blending Approach", American Real Estate Society Annual Meeting, San Diego, CA.

2017   (Panel) "Big Data Analytics", Panel Member, American Real Estate Society Annual Meeting, San Diego, CA.

2016   "Deriving Rent-to-Price Ratios: A Comparison of Methods", American Real Estate Society Annual Meeting, Denver, CO. Co-Authored with Gideon Aschwanden

2016   "Property-Level Real Estate Data: Processing Techniques and Documentation Review", Pacific Rim Real Estate Society Annual Meeting, Sunshine Coast, QLD. Co-Authored with Clifford A. Lipscomb

2014   "Piece by Piece: A Parcel-Level Statistical Analysis of Medium Density Redevelopment in Seattle", Western Regional Science Association Annual Meeting, San Diego, CA.

2013   "Investigating the 'Re-urbanism Hypothesis' through an analysis of land market trends.", Western Regional Science Association Annual Meeting, Santa Barbara, CA.

2012 "Expanding GWR: Exploring an N-dimensionally locally weighted regression technique for home price estimation", Western Regional Science Association Annual Meeting, Kauai, Hawaii.

2011 "N-dimensional locally weighted regression for house price prediction", American Real Estate Society Annual Meeting, Seattle, Washington.

2009 "An Iterative Approach to Minimizing Valuation Errors using an Automated Comparable Sales Model", American Real Estate Society Annual Meeting, Monterrey, CA. Co-Authored with Max Kummerow.

2007 "Valuation of Underground Storage and Rents", American Real Estate Society Annual Meeting, San Francisco, CA. Co-Authored with Throupe, R., Kilpatrick, J., & Spiess, W.

Industry Conference Presentations

2023 (Invited Keynote), "Spatio-Temporal Variability and Algorithm Choice" at "GIS/CAMA Valtech", Sponsored by URISA and IAAO, April 3-6, Las Vegas.

2022 "TAF's IAC AVM Standards Report", Appraisal Institute Annual Conference, Las Vegas, NV. with Paul Chandler.

2022 "TAF's IAC AVM Standards Report", Collateral Risk Network (CRN) Spring Conference, New Orleans, LA. with Paul Chandler.

2021 (Invited Keynote) "GIS/CAMA Valtech", Sponsored by URISA and IAAO, March 27-28, Virtual.

2018 "Price Indexes for Submarkets: The Hierarchical Blending Method", GIS/CAMA Conferences (Hosted by IAAO and URISA), Houston, TX.

2017 "Mass Appraisal and Big Data (Thinking):Process over Petabytes", International Property Tax Institute (IPTI) Annual Caribbean Conference, Trinidad and Tobago.

Industry Service

2023- Member, Advisory Council. The Center for Appraisal Research and Technology (CART). www.openappraisal.org.

2020-3 The Appraisal Foundation's Industry Advisory Committee (IAC) Automated Valuation Model (AVM) Task Force. Executive Committee Member. Co-Author of Final Report submitted to the Appraisal Foundation. Current Vice-Chair of Post-Report Subcommittee

Book Chapters

2017 "An Analysis of Household Location Choice in Major U.S. Metropolitan Areas using R", in *The Practice of Reproducible Research, eds. Kitzes, J., Turek, D. & Deniz, F.* University of California Press. Co-Authored with Estiri, H. ISBN: 9780520294752 www.practicereproducibleresearch.org.

Grant Funded Research

2016-7 Krause, A and Aschwanden, G. Should I AirBNB my property? Funded by the Real Estate Research Institute, Chicago. $15,000

2014 Youtie, J, Lipscomb, C, Krause, A and Arora, S. Evaluating the Long-term Effect of NIST MEP Services on Establishment Performance. Funded by the National Institute of Standards and Technology.

2014 Crellin, G, Krause, A and O'Connor, S. Role of Housing and other Real Estate in Wealth Accumulation by Asian Immigrants to the United States. Funded by the Asian Real Estate Association of America (AREAA).

2013 Moudon, A, Hallenbeck, M, Sheikh, A, Krause, A, & Stewart, O. Land Development Risks along State Transportation Corridors. Prepared for the State of Washington, Department of Transportation. Report WA-RD 805.1.

Selected Working Papers

2020 "A machine learning approach to House Price Indexes with the 'hpiR' package".

2018 "Explaining Differences in Rent-Price Ratio Estimates: A Comparison of Three Methods" *with G. Aschwanden*.

2018 "House Price Indexes for Submarkets: A Blending Approach"

Published Book Reviews

2013 Housing Markets and the Global Financial Crisis: The Uneven Impact on Households. Edited by Ray Forrest and Ngai-Ming Yip. *Journal of Regional Science*, 2013, 53(3), 547-548.

2013 Systems Thinking and Decision Making in Urban and Environmental Planning. by Anastassios Perdicoulis, *Review of Regional Studies*, 2013, 42(2), 179-180.

2006 Employment and Regional Development Policy: Market Efficiency versus Policy Intervention – Edited by Helmut Karl and Phillipe Rollet, *Papers in Regional Science*, 2006, 85(1), 163-165.

2005 The Real and Virtual Worlds of Spatial Planning. *Papers in Regional Science*, 2005, 84(1), 139-140.

Media Mentions

2021-10-14 Zestimates for dummies: Everything agents need to know in 2021. *Inman Online*. Link

2018-03-22 Love that view? See how much more you'll pay. *Associated Press posting on New York Times, Chicago Tribune and others*. Link

2016-05-17 Playing the rental yield: secrets to choosing an investment property. *Domain*. Link.

AWARDS and SERVICE

Academic Awards

2021   Winner, Best Paper in Real Estate Market Analysis, American Real Estate Society Annual Meeting. (Co-Authored with Jeremy Gabe, Drew Sanderford and Spenser Robinson).

2019   Winner, Practitioner Research Award, American Real Estate Society Annual Meeting.

2018   Winner, Best Paper in Real Estate Market Analysis, American Real Estate Society Annual Meeting (co-Authored with Gideon Aschwanden).

2018   Winner, Practitioner Research Award, American Real Estate Society Annual Meeting.

2017   Winner, Best Journal Paper, Pacific Rim Real Estate Society Annual Meeting (co-Authored with Eileen Sim and Kimberly Winson-Geideman).

2016   Winner, Best Refereed Paper, Pacific Rim Real Estate Society Annual Meeting (co-Authored with Clifford A. Lipscomb).

2015   Winner, Best Paper in Real Estate Education, American Real Estate Society Annual Meeting (co-Authored with Clifford A. Lipscomb).

2013   Recipient, Lincoln Institute of Land Policy Doctoral Fellowship.

2013   Winner, Emerald Literati Highly Commended Author Award, 2013 with Co-Authors Throupe, Kilpatrick and Spiess (2012).

2013   Finalist, Western Regional Science Association Tiebout Prize.

2013   Recipient, University of Washington, Urban Design and Planning PhD Student Award.

2013   Recipient, American Real Estate Society Doctoral Student Travel Fund.

2009   Best Paper by a Practicing Professional, American Real Estate Society Annual Meeting (co-Authored with M. Kummerow).

2001   Academy of Letters and Science, Distinguished Student Achievement Award, University of Wisconsin - Stevens Point.

Industry Service

2023+   Research Advisory Council Member: Center for Appraisal Research and Technology

2022-3   Vice Chairman: The Appraisal Foundation's Industry Advisory Committee's AVM Task Force.

2021-2   Member: The Appraisal Foundation's Industry Advisory Committee's AVM Task Force.

Academic Service

2023 -   Editor, Technology Section: Journal of Real Estate Literature
2021 -   Referee: Journal of Real Estate Research
2020   Referee: Journal of Sustainable Real Estate
2019   Referee: Journal of Real Estate Practice and Education
2017-8   Referee: Journal of Real Estate Research; Journal of Property Research; National Science Centre of Poland.
2016-7   Member, Human Ethics Advisory Group (HEAG). Faculty of Architecture, Building and Planning
2015-7   Referee: Urban Studies; Pacific Rim Property Research Journal; Geographical Review; Building, Research and Information; Journal of Real Estate Practice and Education; Land Use Policy; Applied GIS; Urban Studies, Applied Spatial Analysis and Policy
2016   Helper: Research Bazaar Melbourne, R Stream
2013-4   Referee: Australasian Journal of Regional Studies
2013-4   Journal of Regional Science Book Reviewer
2012-3   Review of Regional Science Book Reviewer
2005-6   Papers in Regional Science Book Reviewer

PhD Supervision

Russo, Patrizia. University of Melbourne. Co-Supervisor. Expected completion 2017.
Rao, Fujie. University of Melbourne. Committee Member. Expected completion 2018.

TEACHING

University of Melbourne

2015-7   Property Research and Analysis
2015-6   Property Thesis/Professional Project
2015-6   International Property Development
2016   Introduction to R (Assistant)
2017   Property Data and Tools (Under Development)

University of Washington

2013   Microsoft Excel Bootcamp (MSRE Students)
2012   Real Estate Finance (Assistant to J. Delisle)