## Daniel Ernesto Acuña

(publishes as Daniel E. Acuna) Nationality: Chilean-American

115J ECNW Science of Science and Computational Discovery Lab

University of Colorado at Boulder
205 Engineering Center North Wing
Lab website: <a href="https://scienceofscience.org">https://scienceofscience.org</a>

Boulder, CO 80309 Personal website: https://acuna.io

### **Appointment**

The University of Colorado at Boulder Boulder, CO

Associate Professor, Department of Computer Science

Affiliate Professor, Department of Information Science

December 2022 – Present

December 2022 – Present

### **Professional Experience**

Syracuse University, iSchool Syracuse, NY

Associate Professor

July 2022
Assistant Professor

2016 – 2022

#### **Education**

Northwestern University & RIC Chicago, IL 2011 – 2016

**Postdoctoral Researcher** in the Sensory Motor Performance Program at RIC

Research Affiliate in the School of Engineering and Applied Science and the Biomedical Engineering Department at Northwestern University

PI: Dr. Konrad Kording

# **University of Minnesota** Minneapolis, MN 2006 – 2011

### Ph.D. in Computer Science

Thesis: Rational analysis of sequential decision-making in humans and machines

Advisor: Dr. Paul Schrater

### University of Santiago Santiago, Chile 2004

**Bachelors and Master's in Computer Science** 

### **Honors and awards**

•	CU Lab Venture Challenge Winner (\$125,000)	Nov, 2023
•	Best Short Research Paper Finalist (iConference 2022)	2022
•	Best poster award, Metascience 2019 (with Han Zhuang)	2019
•	Probabilistic Models of Cognition (IPAM School – UCLA, 1-week full-tuition	2011
	and lodging)	

• NIH Neuro-physical-computational Sciences (NPCS) Graduate Training Fellowship (1R90 DK71500-04, full tuition, stipend, conference travel expenses)		
<ul> <li>International Graduate Student Fellowship of the Chilean Council of Scientific and Technological Research and the World Bank (tuition, stipend, books)</li> </ul>	2006 – 2010	
<ul> <li>NIPS 2009 travel award</li> </ul>	2008	
<b>Funding</b> (\$ 9.38 million total with \$ 1.32 million to Daniel Acuna)		
• New NSF grant (co-PI) 'The impact of socioeconomic diversity on science and innovation' with Aaron Clauset and Dan Larremore.	2021 – 2023	
• DHHS-Office of Research Integrity: (Conference grant) Computational Research Integrity Conference (CRI-CON) 2023 (sole PI, \$ 50,000)	2021 – 2023	
• DHHS-Office of Research Integrity: Large-scale High-Quality Labeled Datasets and Competitions to Advance Artificial Intelligence for Computational Research Integrity (sole PI, \$ 100,000)	2020 – 2022	
• Sloan Foundation: Does Government Funding Change What You Do? The Effects of Funding on the Direction and Impact of Academic Energy Research (co-PI with David Popp, \$145,467 [Total \$349,380])	2020 – 2023	
• DHHS-ORI: (Conference grant) Computational Research Integrity Conference (CRI-CON) (sole PI, \$ 50,000)	2019 – 2021	
• DHHS-ORI: Human-centered automatic tracing, detection, and evaluation of image and data tampering (sole PI, \$ 150,000)	2019 – 2021	
• NSF-SciSIP: Collaborative Research: Social Dynamics of Knowledge Transfer Through Scientific Mentorship and Publication (PI, \$ 176,475, co-PI Stephen David)	2019 – 2022	
• DARPA: Systematizing Confidence in Open Research and Evidence (SCORE) (Subcontractor, \$ 129,552 [Total \$ 7,672,188], leader is Center for Open Science)	2019 – 2022	
• DHHS-ORI: Methods and tools for scalable figure reuse detection with statistical certainty reporting (sole PI, \$150,000)	2018 – 2020	
• NSF-SciSIP: Optimizing Scientific Peer Review (PI, \$ 214,144 [Total: \$531,339] co-PI with Konrad Kording and James Evans)	2018 – 2022	
• NSF EAGER: Improving scientific innovation by linking funding and scholarly literature (Sole PI, \$ 168,711)	2016 – 2018	
• Microsoft Azure Research Award (\$ 20,000)	2015 - 2016	
<ul> <li>University of Chicago's Knowledge Lab Grant (co-I) "Optimizing scientific peer review"</li> </ul>	2014 – 2016	
<ul> <li>Amazon AWS Educational Grant "Automatic detection of figure element reuse in biological sciences" (\$ 19,850)</li> </ul>	2014 – 2015	

#### **Publications**

# https://scholar.google.com/citations?user=GAi23ssAAAAJ

- 1. Zhuang, H., <u>Acuna, D. E.</u> (2024). Incorporating costs and benefits to the evaluation of uncertain research results: Applications to cancer research funding. Quantitative Science Studies, 5(4), 1047-1069.
- 2. Taechoyotin, P., <u>Acuna, D. E.</u> (2024). MISTI: Metadata-Informed Scientific Text and Image Representation through Contrastive Learning. Proceedings of the Fourth Workshop on Scholarly Document Processing (SDP).
- 3. Novoa-Monsalve, E., Patterson, D., Ludi, S., <u>Acuna, D. E.</u> (2024). Science Needs You: Mobilizing for Diversity in Award Recognition. Communications of the ACM, 67(8), 18-21.
- 4. Leto, A., Roy, S., Hoyle, A., <u>Acuna, D. E.</u>, Pacheco, M. L. (2024). A First Step towards Measuring Interdisciplinary Engagement in Scientific Publications: A Case Study on NLP+ CSS Research. Proceedings of the Sixth Workshop on Natural Language Processing and Computational Social Science (NLP+CSS).
- 5. Zeng, T., <u>Acuna, D. E.</u> (2024). Dataset Mention Extraction in Scientific Articles Using Bi-LSTM-CRF Model. arXiv preprint arXiv:2405.13135.
- 6. Bibal, A., Salem, N. M., Cardon, R., White, E. K., <u>Acuna, D. E.</u>, Burke, R., Hunter, L. E. (2024). RecSOI: Recommending research directions using statements of ignorance. Journal of Biomedical Semantics, 15(1), 2.
- 7. Liang, L., Zhuang, H., Zou, J., <u>Acuna, D. E.</u> (2024). The complementary contributions of academia and industry to AI research. arXiv preprint arXiv:2401.10268.
- 8. Taechoyotin, P., Wang, G., Zeng, T., Sides, B., <u>Acuna, D. E.</u> (2024). MAMORX: Multi-agent multi-modal scientific review generation with external knowledge. NeurIPS 2024 Workshop Foundation Models for Science: Progress, Opportunities.
- 9. Varasteh, M., McKinnie, E., Aird, A., <u>Acuna, D. E.</u>, Burke, R. (2024). Comparative Explanations for Recommendation: Research Directions.
- Xu, H., Liu, M., Bu, Y., Sun, S., Zhang, Y., Zhang, C., <u>Acuna, D. E.</u>, Gray, S., Meyer, E., Ding, Y. (2024). The impact of heterogeneous shared leadership in scientific teams. Information Processing & Management, 61(1), 103542.
- 11. Zhuang, H., Huang, T. Y., & <u>Acuna, D. E.</u> (2023). <u>A computational analysis of accessibility, readability, and explainability of figures in open access publications</u>. EPJ Data Science, 12(1), 5.
- 12. Huimin Xu, Meijun Liu, Yi Bu, Shujing Sun, Yi Zhang, Chenwei Zhang, <u>Daniel E Acuna</u>, Steven Gray, Eric Meyer, Ying Ding (2024). <u>The impact of heterogeneous shared leadership in scientific teams</u>. Information Processing & Management, 61(1), 103542.
- 13. <u>Acuna, D.E.</u>, Teplitskiy, Misha, Evans, James, Kording, Konrad (2022), <u>Author-suggested reviewers rate manuscripts much more favorably: A cross-sectional analysis of the neuroscience section of PLOS ONE, PLOS ONE [IF: 3.24]</u>
- 14. Ke, Q., Liang, L., Ding, Y., David, SV., <u>Acuna, D.E.</u>, (2022) <u>A dataset of mentorship in bioscience with semantic and demographic estimations</u>, *Scientific Data*, [IF: 6.44]

- 15. Zhuang, H., Huang, TY, <u>Acuna, DE</u>, (2021) "<u>Graphical integrity issues in open access publications: detection and patterns of proportional ink violations</u>", *PLOS Computational Biology*, [IF: 4.428]
- Zeng, T. and <u>Acuna, D.E.</u>, (2020) "<u>Modeling citation worthiness by using attention-based Bidirectional Long Short-Term Memory networks and interpretable models</u>", Scientometrics, 124(1), 399–428 [IF: 2.770]
- 17. Zeng, T., Wu, L., Bratt, S., <u>Acuna, D.E.</u>, (2020) "<u>Assigning credit to scientific datasets using article citation networks</u>", *Journal of Informetrics* [IF: 3.879]
- 18. Jas, M., Achakulvisut, T., Idrizović, A., <u>Acuna, D.E.</u>, Antalek, M., Marques, V., Odland, T., Garg, R., Agrawal, M., Umegaki, Y., Foley, P., Fernandes, H., Harris, D., Li, B., Pieters, O., Otterson, S., De Toni, G., Rodgers, C., Dyer, E., Hamalainen, M., Kording, K., Ramkumar, P. (2020) "<u>Pyglmnet: Python implementation of elastic-net regularized generalized linear models</u>", *Journal of Open Source Software*, 5(47), 1959 [IF: 2.283 (estimated)]
- 19. Achakulvisut, T., <u>Acuna, D.E.</u>, Kording, K. (2020) "<u>Pubmed Parser: A Python Parser for PubMed Open-Access XML Subset and MEDLINE XML Dataset</u>", *Journal of Open Source Software*, 5(46), 1979 [IF: 2.283 (estimated)]
- 20. \*Líenard, JF, Achakulvisut, T, <u>Acuna, D.E.</u>, David, SV (2018) "<u>Intellectual Synthesis in Mentorship Determines Success in Academic Careers</u>", *Nature Communications* [IF: 14.919]
- 21. \*Teplitskiy, M, <u>Acuna, D.E.</u>, Elamrani-Raoult, A, Körding, K, Evans, J, (2018) "<u>The sociology of scientific validity: How professional networks shape judgment in peer review</u>", *Research Policy* [**IF: 8.11**]
- 22. Taraz G. Lee, <u>Acuna, D.E.</u>, K. P., Grafton, S. T. (2018) "<u>Limiting motor skill knowledge via incidental training protects against choking under pressure</u>", *Psychonomic Bulletin & Review* [IF: 4.693]
- 23. Ramkumar, P, <u>Acuna, D.E.</u>, Berniker, M, Grafton, S, Turner, RS, Kording, K (2016) "<u>Chunking as the result of an efficiency computation trade-off</u>", *Nature Communications* [IF: 14.919]
- 24. Achakulvisut, T, <u>Acuna, D.E.</u>, Ruangrong, T and Kording, K (2016) "<u>Science Concierge: A Fast Content-Based Recommendation System for Scientific Publications</u>" *PLoS One* 11(7): e0158423. [IF: 3.24]
- 25. Ethier, C, <u>Acuna, D.E.</u>, Solla, S, Kording, K, Miller, L "<u>Adaptive Neuron-to-Muscle Decoder Training for FES Neuroprostheses</u>", *Journal of Electrophysiology* [IF: 2.873]
- 26. <u>Acuna, D.E.</u>, Berniker, M, Fernandes, H, Kording, K (2015) "<u>Using psychophysics to ask if the brain samples or maximizes</u>", *Journal of Vision 15(3): 7* [IF: 2.089]
- 27. \*Lancichinetti, A, Sirer, MI., Wang, J. X, <u>Acuna, D.E.</u>, Kording, K., Amaral, LAN, (2015) "<u>A high-reproducibility and high-accuracy method for automated topic classification</u>", *Phys. Rev. X 5, 011007* [IF: 15.762]
- 28. <u>Acuna, D.E.</u>, Wymbs, Nicholas F, Reynolds, Chelsea A., Picard, N, Turner, RS, Strick, PL, Grafton, ST, Kording, KP (2014) "<u>Multi-faceted aspects of chunking enable robust algorithms</u>", *Journal of Neurophysiology* Vol. 112 no. 8, 1849-1856 [IF: 2.225]
- 29. <u>Acuna, D.E.</u>, Penner, O, Orton CG, (2013) "<u>The future h-index is an excellent way to predict scientists' future impact</u>", *Med. Phys.* 40, 110601 [**IF: 3.177**]
- 30. \* Acuna, D.E., Allesina, S, Kording, KP (2012) "Future impact: Predicting scientific success", *Nature*, Volume 489, Number 7415, 201-202 [IF: 42.778]

- 31. Avraham, G, Nisky, I, Fernandes HL, <u>Acuna, D.E.</u>, Kording, KP, Loeb, GE, Karniel A. (2011) "<u>Towards perceiving robots as humans Three handshake models face the Turing-like handshake test</u>", *IEEE Transactions on Haptics* [**IF: 3.099**]
- 32. <u>Acuna, D.E.</u>, Schrater, P. (2010) "<u>Structure learning in human sequential decision-making</u>", *PLoS Computational Biology* [**IF: 4.7**]
- 33. <u>Acuna, D.E.</u>, Parada, V. (2010) "<u>People efficiently explore the solution space of the computationally intractable traveling salesman problem to find near-optimal tours</u>", *PLoS ONE* 5(7) [IF: 3.24]

### Peer-reviewed proceedings

- 34. <u>Acuna, DE</u>, Yi, Z, Liang, L., Zhuang, H, "<u>Predicting the usage of scientific datasets based on article, author, institution, and journal bibliometrics</u>", *iConference 2022, Lecture Notes in Computer Science*
- 35. \*Acuna, D.E., Liang, L. (2021), "Are AI ethics conferences different and more diverse compared to traditional computer science conferences?" AAAI/ACM Conference on Artificial Intelligence, Ethics, and Society 2021
- 36. Zeng, T., & <u>Acuna, D.E.</u> (2020), "<u>GotFunding: A Grant Recommendation System Based on Scientific Articles</u>" *Proceedings of the 83rd Annual Meeting of the Association for Information Science and Technology*
- 37. Liang, L., <u>Acuna, D.E.</u>, (2020), "<u>Don't Judge a Journal by its Cover? Appearance of a Journal's Website as Predictor of Blacklisted Open-Access Status</u>", In *Association for Information Science and Technology, Maryland, USA*
- 38. Liang, L. and Acuna, D.E., (2020) "Artificial mental phenomena: Psychophysics as a framework to detect perception biases in AI models". In Conference on Fairness, Accountability, and Transparency (FAT\* '20), January 27–30, 2020, Barcelona, Spain. ACM, New York, NY, USA, 10 pages [Acceptance rate: 24%]
- 39. <u>Acuna, D.E.</u>, (2019) "Helping research misconduct investigations: methods for statistical certainty reporting of inappropriate figure reuse", *World Conference on Research Integrity 2019, Hong Kong*
- 40. Zeng, T., Shema, A., & <u>Acuna, D.E.</u>. (2019) "<u>Dead science: most resources linked in scientific articles disappear in eight years</u>", *iConference 2019. Lecture Notes in Computer Science*, vol 11420. Springer [Acceptance rate: 52%]
- 41. Sheima, A. <u>Acuna, D.E.</u> "Show me your app usage and I will tell who your close friends are: Predicting user's context from simple cell phone activity", CHI 2017 Late-Breaking Work [Acceptance rate: 35%]
- 42. <u>Acuna, D.E.</u>, Green, CS, Schrater, P (2010) "The rational control of aspiration in learning", *COSYNE 2010* (Abstract and poster presentation)
- 43. <u>Acuna, D.E.</u>, Green, CS, Schrater, P (2010) "Decision-making in unbounded environments using nonparametric Bayesian Reinforcement Learning", NIPS 2010 Workshop on Bounded-rational analyses of human cognition: Bayesian models, approximate inference, and the brain
- 44. <u>Acuna, D.E.</u>, Schrater, P. (2009) "Improving Bayesian reinforcement learning using transition abstraction", *ICML/UAI/CLT Workshop on Abstraction in Reinforcement Learning 2009*

- 45. <u>Acuna, D.E.</u>, Schrater, P. (2009) "<u>Structure learning in human sequential decision-making</u>", *NeurIPS 2008* [Acceptance rate: 24%]
- 46. <u>Acuna, D.E.</u>, Schrater, P. (2008) "Bayesian modeling of human sequential decision-making on the Multi-Armed Bandit Problem", *COGSCI 2008*

### Books and book chapters

- 47. Zeng, T, <u>Acuna, D.E.</u>, (2020) "Dataset mention extraction in scientific articles using a BiLSTM-CRF model" Chapter 11 in Julia I. Lane, Ian Mulvany, and Paco Nathan (Ed.), Rich Search and Discovery for Research Datasets: Building the next generation of scholarly infrastructure, New York, 2020
- 48. <u>Acuna, D.E.</u>, (2011) Rational Bayesian analysis of sequential decision-making under uncertainty in humans and machines, Ph.D. Thesis, University of Minnesota-Twin Cities

#### **Keynote and invited talks**

- 1. Moderator for the panel 'The Other Side: Junk, Fraud, Retractions, and Paper Mills' at the International Conference on Science of Science and Innovation 2024 (Washington, DC)
- 2. November 2, 2023 invited speaker Colorado Clinical and Translational Sciences Institute What research can teach us about research integrity and culture? University of Colorado Anschutz Medical Campus
- 3. December 14, 2022 <u>invited speaker (virtual)</u> Forensic Analysis of Scientific Images: Challenges and Opportunities Detect and Correct Interest Group (Global)
- 4. August 22, 2022 <u>talk</u> Large-scale nearest neighbor search for research integrity Ray Summit, San Francisco, CA
- 5. June 11, 2022 <u>invited speaker</u> International Conference on Data Intelligence & Information Service Development, *Tianjin Normal University, China* (virtual)
- 6. November 18, 2021 <u>invited speaker and discussant</u> Future of Privacy Forum (fpf.org) "Promoting Responsible Research Data Access", *Virtual*
- 7. June 10, 2019 <u>Invited talk and panel discussion</u> Science of bad science, *Science of Science conference at the University of Chicago Center in Beijing, Beijing, China*
- 8. May 10, 2019 <u>Keynote speaker</u> To catch a science cheater: detecting imagery fraud in biomedical research, 8th Annual Ethics in Biomedical Research Lecture, University of Rochester School of Medicine and Dentistry
- 9. March 10, 2019 <u>Invited talk</u> The effect of innovation on the future impact of scientific grants, *Research Institute of Electrical Communication, Tohoku University, Sendai, Japan*
- 10. November 2018 <u>Invited talk and panel discussion</u> Bias in Deep Learning Models *Journalist & Artificial Intelligence: Consequences and Opportunities in Emerging Tech Diversity, Inclusion, & Bias in AI, Newhouse, Syracuse University*
- 11. November 2017 <u>Invited Talk</u> Data Science of Data Science: Should you improve your Hadoop skills or learn time-series analytics? *Computer Science, Syracuse University*
- 12. October 2017 <u>Invited Talk</u> Data Science of Data Science: Should you improve your Hadoop skills or learn time-series analytics? *Rochester Institute of Technology*
- 13. October 2016 <u>Invited talk</u> Improving Scientific Innovation: A Data Science Perspective, *Research Computing, Syracuse University*

- 14. May 2016 <u>Invited webinar</u> Evaluating Merit Review: Content-Based Reviewer-Manuscript Assignment and Bayesian Article Scoring, *American Institute of Biological Sciences Scientific, Peer Advisory and Review Services*
- 15. April 2016 <u>Plenary talk</u> Tools to improve peer review and scholarly research, *University of Wisconsin, Madison*
- 16. March 2016 <u>Plenary talk</u> Data science to understand knowledge discovery and expertise, *ChiPy (Chicago Python), Chicago, IL*
- 17. "Should journals allow authors to suggest reviewers?" (talk), Quantifying Science, (European) Conference on Complex Systems '15, Temple, Arizona, Summer 2015
- 18. "Machine learning tools for improving Science" (<u>talk</u>), Metaknowledge Research Network, Summer Retreat, California, Summer 2015
- 19. "Big data science of science" (talk), Metaknowledge Research Network, Spring Retreat, University of Chicago, Winter 2015
- 20. "Automatic detection of figure element reuse in biological science articles", (talk) Science of Team Science Conference, Austin, TX, August 2014
- 21. "Big data machine learning for prediction and classification" (<u>Invited academic speaker</u>, plenary), The Tenth Workshop on the Development of Advanced Algorithms for Security Applications (ADSA10), Boston, MA, April 2014,
- 22. "An investigation of how prior beliefs influence decision-making under uncertainty in a 2AFC task", (<u>Plenary talk</u>, 3% acceptance rate) Computational and Systems Neuroscience (COSYNE), Salk Lake City, UT, March 2013
- 23. "Rational analysis of human problem solving and sequential decision-making under uncertainty ", (<u>Invited talk</u>) Rehabilitation Institute of Chicago, Northwestern University, Chicago, IL, July 2010
- 24. "Rational analysis of human sequential decision-making under uncertainty and human problem solving," (<u>Invited talk</u>) Department of Brain and Cognitive Sciences, MIT, Cambridge, MA, June 2010

#### **Patents**

- 1. <u>Daniel E. Acuna</u>, Konrad Kording, "System and method for automated detection of figure element reuse," US Patent App. 16/752,113, 2020 (assignee Syracuse University, Northwestern University, and Rehabilitation Institute of Chicago)
- 2. Konrad Kording, <u>Daniel E. Acuna</u>, Titipat Achakulvisut. "Data Butler." U.S. Provisional Patent Application No. 62/218,998, filed September 15, 2015 (assignee Rehabilitation Institution of Chicago)

#### **Academic service**

- Member of Program Committee of the <u>9th Atlanta Conference on Science and Innovation</u> <u>Policy</u> (hosted by the Georgia Institute of Technology)
- Member of Program Committee for the <u>9th International Conference on Computational Social Science (IC2S2)</u> (hosted by the University of Copenhagen)
- Program Committee Co-Chair for the <u>2nd International Conference on Science of Science</u> and <u>Innovation</u> (hosted by Northwestern University)

- Organizer of ORI-funded Data2Graph and Text Paraphrasing competitions at Eval.ai (<a href="http://competition.cri-conf.org/">http://competition.cri-conf.org/</a>)
- 2022-present: Member of the <u>ACM Diversity</u>, <u>Equity</u>, <u>and Inclusion (DEI) Council</u> leading the *Social Justice in Publications*, *Reviews*, *Awards*, & *Research* focus.
- Co-Organizer <u>Data-Driven Science of Science</u> workshop at KDD 2022, August 14 18, 2022
- Co-Organizer of them NSF-funded *Science of Science Summer School* (S4) 2021 and 2022, virtually hosted by Syracuse University, Syracuse, NY (<a href="https://s4.scienceofscience.org">https://s4.scienceofscience.org</a>)
- Organizer of the ORI-funded Computational Research Integrity Conference (CRICONF) 2021 and 2023, Washington, DC (<a href="https://cri-conf.org">https://cri-conf.org</a>)
- Organizer of iConference 2021 workshop: Machine Learning and Artificial Intelligence for Science of Science and Computational Discovery: Principles, Applications, and Future Opportunities (https://scienceofscience.org/workshops/)
- Editorial Board: Journal of Social Computing (IEEE Xplore), Humanities & Social Sciences Communications (Springer Nature)
- Committee member: 2nd Workshop on Scholarly Document Processing 2021 (<a href="https://2021.naacl.org/">https://2021.naacl.org/</a>)
- Member of the Data Science Leadership of the Academic Data Science Alliance (ADSA)
- Associate Chair: Late-Breaking Work CHI 2017
- Reviewer for: Nature Communications, Scientometrics, Journal of Informetrics, Research Policy, IEEE Transactions on Human-Machine Systems, Journal of the Royal Society Interface, Research Evaluation, Operations Research, PLoS Computational Biology, PLoS ONE, NIPS 2009, NIPS 2010, CogSci 2009
- Ad-hoc reviewer: NSF's Science of Science and Innovation Policy, Department of Energy Office of Science's Office of Advanced Scientific Computing Research

#### CU Boulder's Service

- 2023 2024: Chair of NLP Search Committee
- 2022-: Graduate Committee
- 2022-: Participant of the Graduate School DEAI Summit and Subsequent Meetings

### Syracuse University's Service

- 2021-2022: Research Technology Committee
- 2020-2021: ADS Program Committee, Doctoral Program Committee
- 2019-2020: ADS Program Committee, Doctoral Program Committee, BLIST adviser
- 2018-2019: Doctoral Program Committee, Black and Latinx Information Science and Technology Society (BLISTS)
- 2017-2018: Doctoral Program Committee, Personnel

#### Media

• Interview for *The New Yorker* (2021) "How a Sharp-Eyed Scientist Became Biology's Image Detective"

https://www.newyorker.com/science/elements/how-a-sharp-eyed-scientist-became-biologys-image-detective

- Interview for *Nature News* (2020) "Pioneering duplication detector trawls thousands of coronavirus preprints" <a href="https://www.nature.com/articles/d41586-020-02161-3">https://www.nature.com/articles/d41586-020-02161-3</a>
- Mention in *Nature Machine Learning Editorial* (2020) "A match for virtual conferences" <a href="https://www.nature.com/articles/s42256-020-0182-5">https://www.nature.com/articles/s42256-020-0182-5</a>
- Mention in *Nature News* (2020) "Publishers launch joint effort to tackle altered images in research papers" <a href="https://www.nature.com/articles/d41586-020-01410-9">https://www.nature.com/articles/d41586-020-01410-9</a>
- *Nature Feature* interview about Elisabeth Bik (2020) "Meet this super-spotter of duplicated images in science papers" <a href="https://www.nature.com/articles/d41586-020-01363-z">https://www.nature.com/articles/d41586-020-01363-z</a>
- Interview for *Nature News* (2018) "Researchers have finally created a tool to spot duplicated images across thousands of papers" <a href="https://www.nature.com/articles/d41586-018-02421-3">https://www.nature.com/articles/d41586-018-02421-3</a>
- Interviews: Nature Podcast, The Chronicle of Higher Education, NPR Science Friday, The Scientists, The Daily Orange, Nature Editorial, Wired, Phys.org, BioTechniques,

#### Students and committees

Postdoctoral advisor (1 student): Qing Ke, Ph.D. (now at the City University of Hong Kong in Department of Data Science)

Visiting scholar (1 student): Tong Zeng, School of Information Management, Nanjing University (Fall 2017 - Spring 2021)

*Ph.D. advisor* (5 students): Pawin Taechoyotin (CU Boulder, since 2024), Almene De Meran Meguimtsop (CU Boulder), Carolina Chávez-Ruelas (CU Boulder), Meysam Varasteh (CU Boulder), Han Zhuang (graduated Spring 2023), Lizhen Liang (entering fourth year) from iSchool, Syracuse University

*Ph.D. thesis committees* (6 students): Sikana Tanupabrungsun (defended 2016), Ivan Shamshurin (defended 2019), Mahboobeh Harandi (EOC only), Yingya Li (defended 2022), Yisi Sang (defended 2022), Alain Shema (defended 2022), Yuheun Kim (first year advisor), Hunter Wapman (CU Boulder)

Research practica (5 students): Dipto Das, Research Assistant, iSchool, Fall 2019; Sarah Bratt, Research Practicum, iSchool, Spring 2018; Alex Smith, Graduate Assistant, Teaching and Research Practica, iSchool (Fall 2017-Spring 2018); Mahboobeh Harandi, iSchool, Research Practicum, Spring 2017; Alain Shema, Graduate Assistant, Teaching and Research Practica (Fall 2016 - Spring 2018)

Master's students (23 students): Tzu-Yang (Peter) Huang, Faculty Engagement Scholar, iSchool, since Fall 2020; Hanlin Zhang, Computer Science, Fall 2019 - Spring 2021; Jian Jian, iSchool, Spring 2020 - Spring 2021; Rashika Singh, Faculty Engagement Scholar, iSchool, Fall 2019 - Spring 2021; Sourabh Ghosh, Faculty Engagement Scholar, iSchool, Fall 2019 - Fall 2020; Megha Ramesh Jakhotia, Faculty Engagement Scholar, previously with prof. Yang Wang, Fall 2019 - Spring 2020; Ziyue (Alan) Xiang, Computer Science, Fall 2018 - Spring 2020, now a Ph.D. student at Purdue University; Ananth Raj GV, iSchool, Spring 2019 - Spring 2020, a data scientist with Bank of America; Omkar Buchade, Computer Science, since Fall 2018 (in Summer 2019 internship with CBS Interactive); Mengyu (Mike) Liu, Computer Science, Fall 2018 - Summer 2019; Priya Matnani, iSchool (IM with CAS in Data Science), Faculty Engagement Scholar, Fall 2017 - Spring 2019 (Summer 2018 internship at Airbnb, San Francisco), data

scientist at Airbnb; Xinxuan Wei, iSchool, Spring 2018 - Spring 2019, data scientist in Shanghai, China; Woojin Park, iSchool (Applied Data Science program), Faculty Engagement Scholar, Fall 2018 - Spring 2019, currently at CMU; Zexin Yao, Computer Science, Spring 2018 - Spring 2019 (Summer 2018 internship at NetEase Games, Guangzhou City, China) - will be a software engineer for Google starting June 2019; Puzhen (Price) Qian, Computer Science, Fall 2018 - Spring 2019; Shloak Gupta, iSchool, Fall 2018; Kartik Nagre, iSchool, Fall 2016 - Spring 2018, Data Scientist at NewtonX; Ziyi Qiu, Computer Engineering, Summer 2017 - Spring 2018, looking for positions in Data Science; Shengjun Zhang, MS (2017), iSchool, Bytedance Inc.; Zhida Zhao, MS (2017), iSchool, looking for positions in Data Science; Manas Sikri, MS (2017), iSchool, Goldman Sachs; Shrutik Katchhi, MS (2017), iSchool, Ernst & Young

#### **Software tools**

- ReviewerZero AI (<a href="https://reviewerzero.ai">https://reviewerzero.ai</a>)
- Exploratory Innovator of Literature Networks (<a href="https://eileen.io">https://eileen.io</a>): Recommendation system for scientific articles. Close to 3,000 users since its launch in 2017
- Dr. Figures. Figure element reuse detection (potential scientific fraud detection) (<a href="https://beta.drfigures.com">https://beta.drfigures.com</a>) Currently being tried by journals, offices of research integrity, scientists, and other institutions.