# Zhaobin Kuang (a.k.a. Charles Kwong)


**Contact Information**

Google
111 8th Ave
New York, NY 10011, USA

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Homepage: https://zhaobinkuang.github.io/


**Industry Experience**

**Senior Research Scientist** — May 2022 – Present
Google Research — New York, NY, USA

**Research Scientist** — Sep 2020 – May 2022
Google Ads — Los Angeles, CA, USA

**Research Summer Intern** — May 2017 – Aug 2017
IBM Thomas J. Watson Research Center — Yorktown Heights, NY, USA

**Education**

**Ph.D.** and **M.S.** in Computer Sciences — June 2014 – August 2018
The University of Wisconsin, Madison (UW) — Madison, WI, USA
Advisor: David Page.

**M.S.** in Applied and Computational Mathematics — August 2012 – June 2014
The University of Minnesota, Duluth (UMD) — Duluth, MN, USA
Advisors: Zhuangyi Liu and Richard Maclin.

**B.Eng.** in Electrical Engineering and Automation — August 2008 – July 2012
Honors School — Harbin, Heilongjiang, China
The Harbin Institute of Technology (HIT)

**Awards**

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| American Medical Informatics Association Doctoral Dissertation Award Top 3 | 2019 |
| UW CS Graduate Student Research Award (best dissertation award at UW CS) | 2018 |
| UMD Math & Stat Graduate Student Service Award | 2014 |
| UMD Math & Stat Outstanding Graduate Award | 2014 |
| UMD Math & Stat Special Fellowship | 2013 |
| UMD Math & Stat Summer Research Fellowship | 2013 |
| HIT Freshman Fellowship (top admitted student in college entrance exams) | 2008 |

**Academic Experience**

**Postdoctoral Researcher** — Sep 2018 – Aug 2020
Computer Science Department — Stanford, CA, USA
Stanford University
Advisor: Christoper Ré.

**Research Assistant** — Sep 2014 – May 2018
Computer Sciences Department — Madison, WI, USA
Department of Biostatistics and Medical Informatics
The University of Wisconsin, Madison
The Wisconsin Institutes for Discovery

**Research Assistant** — Jan 2013 – May 2014
Department of Mathematics and Statistics — Duluth, MN, USA
Department of Computer Science

The University of Minnesota, Duluth

**Teaching Assistant** Sep 2012 – Dec 2012
Department of Mathematics and Statistics Duluth, MN, USA
The University of Minnesota, Duluth

- Course taught: MATH 1160 – Finite Mathematics and Introduction to Calculus.

## Papers

Zhong-Jie Han, **Zhaobin Kuang**, and Qiong Zhang. *Stability Analysis for Abstract Theomoelastic Systems with Cattaneo's Law and Inertial Terms*. Alphabetical authorship. Mathematical Control and Related Fields (MCRF), 2022, Accepted.

**Zhaobin Kuang**, Chidubem Arachie, Bangyong Liang, Pradyumna Narayana, Giulia Desalvo, Michael Quinn, Bert Huang, Geoffrey Downs, and Yang Yang. *Firebolt: Weak Supervision Under Weaker Assumptions*. International Conference on Artificial Intelligence and Statistics, 2022 (AISTATS 2022).

**Zhaobin Kuang**, Zhuangyi Liu, and Louis Tebou. *Optimal semigroup regularity for velocity coupled elastic systems: a degenerate fractional damping case*. Alphabetical authorship. ESAIM: Control, Optimisation and Calculus of Variations (ESAIM: COCV), 2022.

**Zhaobin Kuang**, Zhuangyi Liu, and Hugo D. Fernández Sare. *Regularity Analysis for an Abstract Thermoelastic System with Inertial Term*. Alphabetical authorship. ESAIM: Control, Optimisation and Calculus of Variations (ESAIM: COCV), 2021.

**Zhaobin Kuang**, Frederic Sala, Nimit Sohoni, Sen Wu, Aldo Cordova Palomera, Jared Dunnmon, James Priest, and Christopher Ré. *Ivy: Instrumental Variable Synthesis for Causal Inference*. International Conference on Artificial Intelligence and Statistics, 2020 (AISTATS 2020).

Wei Zhang, **Zhaobin Kuang**, Peggy Peissig, and David Page. *Adverse Drug Reaction Discovery from Electronic Health Records with Deep Neural Networks*. ACM Conference on Health, Inference, and Learning, 2020 (ACM CHIL 2020).

Sinong Geng, **Zhaobin Kuang**, David Page, Peggy Peissig, and Karen Hansen. *Parathyroid hormone independently predicts fracture, vascular events, and death in patients with stage 3 and 4 chronic kidney disease*. Osteoporosis International, 2019.

Sinong Geng*, **Zhaobin Kuang***, Peggy Peissig, and David Page. *Temporal Poisson Square Root Graphical Models*. *ZK and SG contributed equally. International Conference on Machine Learning, 2018 (ICML 2018).

Sinong Geng*, **Zhaobin Kuang***, Jie Liu, Stephen Wright, and David Page. *Stochastic Learning for Sparse Discrete Markov Random Fields with Controlled Gradient Approximation Error*. *ZK and SG contributed equally. Uncertainty in Artificial Intelligence, 2018 (UAI 2018).

Nicholas Escanilla, Lisa Hellerstein, Ross Kleiman, **Zhaobin Kuang**, James Shull, and David Page. *Recursive Feature Elimination by Sensitivity Testing*. IEEE Conference on Machine Learning and Applications, 2018.

**Zhaobin Kuang**, Sinong Geng, and David Page. *A Screening Rule for L1-Regularized Ising Model Estimation*. Neural Information Processing Systems, 2017 (NeurIPS 2017).

**Zhaobin Kuang**, Peggy Peissig, Vitor Santos Costa, Richard Maclin, and David Page. *Pharmacovigilance via Baseline Regularization with Large-Scale Longitudinal Observational Data*. Knowledge Discovery and Data Mining, 2017 (KDD 2017).

Yujia Bao, **Zhaobin Kuang**, Peggy Peissig, David Page, and Rebecca Willett. *Hawkes Process Modeling of Adverse Drug Reactions with Longitudinal Observational Data*. Machine Learning in Health Care, 2017 (MLHC 2017).

Finn Kuusisto, John Steill, **Zhaobin Kuang**, James Thomson, David Page, and Ron Stewart. *A Simple Text Mining Approach for Ranking Pairwise Associations in Biomedical Applications*. American Medical Informatics Association Joint Summit 2017 (AMIA 2017).

**Zhaobin Kuang**, James Thomson, Michael Caldwell, Peggy Peissig, Ron Stewart, and David Page. *Computational Drug Repositioning Using Continuous Self-controlled Case Series*. Knowledge Discovery and Data Mining, 2016 (KDD 2016).

**Zhaobin Kuang**, James Thomson, Michael Caldwell, Peggy Peissig, Ron Stewart, and David Page. *Baseline Regularization for Computational Drug Repositioning with Longitudinal Observational Data*. International Joint Conference on Artificial Intelligence, 2016 (IJCAI 2016).

## Book Chapters

**Zhaobin Kuang**, Yujia Bao, James Thomson, Michael Caldwell, Peggy Peissig, Ron Stewart, Rebecca Willett, and David Page. *A Machine-Learning Based Drug Repurposing Approach Using Baseline Regularization.* Invited book chapter. In Silico Repurposing. Methods in Molecular Biology Series. Springer 2019.

## Technical Reports

Sinong Geng, Houssam Nassif, **Zhaobin Kuang**, Max Reppen, and Ronnie Sircar. *Factor Learning Portfolio Optimization Informed by Continuous-Time Finance Models*. In Submission to the International Conference on Learning Representation, 2023.

Ross Kleiman, Paul Bennett, Peggy Peissig, **Zhaobin Kuang**, Scott Hebbring, Michael Caldwell, and David Page. *High-Throughput Machine Learning from Electronic Health Records*. Technical Report. arXiv, 2019.

Sinong Geng, **Zhaobin Kuang**, and David Page. *An Efficient Pseudo-likelihood Method for Sparse Binary Pairwise Markov Network Estimation*. Technical Report. arXiv, 2017.

## Talks

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|---|---|
| International Conference on Artificial Intelligence and Statistics | Aug 2020 |
| Radix Trading, LLC | July 2020 |
| Google, LLC | June 2020 |
| Amazon.com, Inc. | June 2020 |
| National Institutes of Health | March 2020 |
| Stanford University (Stanford, CA, USA) | Apr 2018 |
| NEC Laboratories America (Princeton, NJ, USA) | Feb 2018 |
| Amazon.com, Inc. (Seattle, WA, USA) | Dec 2017 |
| Massachusetts Institute of Technology (Cambridge, MA, USA) | Nov 2017 |
| Criteo Research (Palo Alto, CA, USA) | Oct 2017 |
| Int. Conf. Knowledge Discovery & Data Mining (Halifax, NS, Canada) | Aug 2017 |
| Int. Joint Conf. Artificial Intelligence (New York City, NY, USA) | July 2016 |

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| Professional Service | International Machine Learning Society (IMLS) | Member |
| | ACM Conference on Health, Inference, and Learning 2021, 2022 | PC Member |
| | Association for the Advancement of Artificial Intelligence 2020, 2021 | PC Member |
| | Knowledge Discovery and Data Mining 2019-2022 | PC Member |
| | Uncertainty in Artificial Intelligence 2018 | PC Member |
| | NeurIPS Machine Learning for Health 2017, 2018 | PC Member |
| | NeurIPS Workshop on Relational Representation Learning 2018 | PC Member |
| | Nature Communications | Reviewer |
| | Clinical Epidemiology | Reviewer |
| | Journal of Machine Learning Research | Reviewer |
| | Transaction of Machine Learning Research | Reviewer |
| | Artificial Intelligence in Medicine | Reviewer |
| | IEEE Transactions on Neural Networks and Learning Systems | Reviewer |
| | PLOS ONE | Reviewer |
| | Pattern Recognition | Reviewer |
| | IEEE Geoscience and Remote Sensing Letters | Reviewer |
| | IEICE Transactions on Information and Systems | Reviewer |
| | Data Mining and Knowledge Discovery | Reviewer |
| | Gene Reports | Reviewer |
| | International Conference on Artificial Intelligence and Statistics 2022 | Reviewer |
| | International Conference on Machine Learning 2019-2022 | Reviewer |
| | International Conference on Learning Representation 2019-2022 | Reviewer |
| | IEEE ICMLA Special Session on Algorithms 2018 | Reviewer |
| | Neural Information Processing System 2018-2021 | Reviewer |
| | Machine Learning for Health Care 2018-2021 | Reviewer |
| | AMIA Informatics Summit 2018, 2019, 2021 | Reviewer |
| | IEEE Int. Symp. on Biomedical Imaging 2014, 2017-2019 | Reviewer |

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| Mentees | **Reza Esfandiarpoor** | Google Ph.D. Research Intern, 2021 |
| | Brown CS Ph.D. student | |
| | **Yixuan Ye** | Google Data Science Intern, 2021 |
| | Yale Statistics Ph.D. | Data Scientist at Google |
| | **Chidubem Arachie** | Google Ph.D. Research Intern, 2021 |
| | Virginia Tech CS Ph.D. | Software Engineer at Google |
| | **Yujia Bao** | UW M.S., 2016-2017 |
| | MIT CS Ph.D. | Senior ML Scientist at Emerald |
| | **Sinong Geng** | UW M.S., 2016-2018 |
| | Princeton CS Ph.D. student | Incoming Quantitative Researcher at Two Sigma |

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|---|---|---|
| Technical Skills | Programming Languages | C/C++, Java, Python, R, Matlab, and Mathematica |
| | Data Analytics | PyTorch, TensorFlow, SQL, Hadoop, and Spark |

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| Miscellaneous | Erdős Number | 3 |
| | Languages | Cantonese, English, and Mandarin |
| | High School | Zhuhai No.1 High School |
| | Legal Name/Alias | Zhaobin Kuang/Charles Kwong |