

# SHUN DONG

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University of Kansas, School of Business  
Lawrence, KS

## EDUCATION

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**University of Kansas** Lawrence, KS  
**Ph.D. Candidate in Analytics, Information and Operations** GPA: 3.84 | Expected May 2027  
**University of Cincinnati** Cincinnati, OH  
**M.S. in Statistics** GPA: 3.72/4.0  
**Missouri State University** Springfield, MO  
**M.S. in Mathematics, Statistics focus** GPA: 3.82/4.0  
**M.B.A.** GPA: 3.91/4.0  
**B.S. in Mathematics, Actuarial Science and Statistics focus** GPA: 3.48/4.0

## RESEARCH INTERESTS

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Statistical Learning; High-Dimensional Data Analysis; Nonparametric and Semiparametric Statistics; Statistical Computing; Machine Learning Applications in Business, Finance, and Risk Analytics.

## JOB MARKET PAPER

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### Accounting for Industry Heterogeneity in Predicting Corporate Default Probability: A Semiparametric Learning Approach [JOB MARKET PAPER]

with Shaobo Li, Ben Sherwood, and Xiaorui Zhu

#### Revise and Resubmit, European Journal of Operational Research

**Abstract:** Predicting corporate default is essential for risk management, credit allocation, and investment decision making, yet most bankruptcy models overlook heterogeneity in how financial distress manifests across industries. We propose the single-index hazard model with multiple links (SIML), a semiparametric learning method that combines a common financial risk index with industry-specific flexible link functions. This structure captures nonlinear industry effects and their interactions with firm-level financial characteristics while retaining an interpretable low-dimensional index. We also develop a two-stage simulation-based testing procedure for industry heterogeneity and nonlinearity. Using a comprehensive database of 18,651 U.S. publicly traded firms from 1980 to 2023, we find strong evidence of distinct nonlinear risk patterns across industries. SIML outperforms a broad set of benchmark models in both in-sample and out-of-sample evaluations. A simulated corporate loan market and an asset-pricing analysis of the distress risk anomaly further show the economic value of accounting for industry-specific default risk.

## PUBLICATIONS

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### Relationship between piperacillin concentrations, clinical factors and piperacillin/tazobactam-associated acute kidney injury

Tang Girdwood, S., Hasson, D., Caldwell, J. T., Slagle, C., **Dong, S.**, Fei, L., Tang, P., Vinks, A. A., Kaplan, J., & Goldstein, S. L.

*Journal of Antimicrobial Chemotherapy*, 78(2), 478-487 (2023). DOI: 10.1093/jac/dkac416.

### Diagnostic accuracy of serum matrix metalloproteinase-7 as a biomarker of biliary atresia in a large North American cohort

Pandurangi, S., Mourya, R., Nalluri, S., Fei, L., **Dong, S.**, Harpavat, S., Guthery, S. L., Molleston, J. P., Rosenthal, P., Sokol, R. J., Wang, K. S., Ng, V., Alonso, E. M., Hsu, E. K., Karpen, S. J., Loomes, K. M., Magee, J. C., Shneider, B. L., Horslen, S. P., Teckman, J. H., & Bezerra, J. A.

*Hepatology* (2024). DOI: 10.1097/HEP.0000000000000827.

### Maternal metabolic dysfunction-associated steatotic liver disease during pregnancy and its impact on offspring steatosis

Klepper, C. M., Trout, A. T., **Dong, S.**, Fei, L., Stankiewicz, T. E., Wayland, J., Moreno-Fernandez, M. E., Divanovic, S., Xanthakos, S. A., DeFranco, E., Woo, J. G., & Mouzaki, M.

*Clinical Nutrition ESPEN*, 70, 327-335 (2025). DOI: 10.1016/j.clnesp.2025.10.009.

## WORKING PAPERS

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### Cost Restricted Feature Selection with Information Criterion

with Ben Sherwood and Shaobo Li

*Accepted for presentation at the 2026 INFORMS Workshop on Data Science*

*Preparing for submission to Management Science*

## **Robust Outcome Optimization via Multi-Model Inverse Classification**

*with Michael Lash, Qihang Lin, and Nick Street*

*Target journal: Journal of Machine Learning Research*

## **Objective-Aligned Sparse Learning for Neyman-Pearson Classification**

*Manuscript in preparation*

## **Dynamic Instrumented Principal Components for Time-Varying Risk Exposures**

*Manuscript in preparation*

## **TEACHING EXPERIENCE**

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| <b>University of Kansas, School of Business, Lawrence, KS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2024 to Present |
| <b>Instructor</b> , Database Management Systems (BSAN 326 / IST 326)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |                 |
| <ul style="list-style-type: none"><li>Independently taught undergraduate database management sections in Fall 2024 and Fall 2025; scheduled to teach again in Fall 2026.</li><li>Fall 2024 BSAN 326: instructor evaluation mean 4.29/5; 4.43 for grading clarity, classroom respect, and communication/responsiveness.</li><li>Fall 2025 BSAN 326: instructor evaluation mean 4.10/5; 4.59 for classroom respect and 4.29 for communication/responsiveness.</li><li>Fall 2025 IST 326: instructor evaluation mean 4.36/5; 4.50 for facilitating comprehension and 4.56 for classroom respect and communication/responsiveness.</li></ul> |                 |
| <b>University of Kansas, School of Business, Lawrence, KS</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | 2023 to Present |
| <b>Teaching Assistant</b> , Advanced Machine Learning (BSAN 745)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |
| <b>Teaching Assistant</b> , Data Mining and Predictive Analytics (BSAN 450)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                 |
| <b>University of Cincinnati, Department of Mathematics, Cincinnati, OH</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               | 2018 to 2020    |
| <b>Instructor</b> , Elementary Statistics I (STAT 1034) and Elementary Statistics II (STAT 1035)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                 |
| <b>Teaching Assistant / Recitation Instructor</b> , Calculus I (MATH 1061) and Calculus II (MATH 1062)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |
| <b>Missouri State University, Department of Mathematics, Springfield, MO</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | 2015 to 2017    |
| <b>Teaching Assistant / Lab Instructor</b> , MTH 101 Intermediate Algebra and Calculus                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |                 |

## **PRESENTATIONS**

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| <b><i>“Corporate Probability of Default: A Single-Index Model with Multiple-Link Approach”</i></b> |                                                              |
| <b>2026</b>                                                                                        | POMS Annual Conference; Big XII + MIS Research Symposium     |
| <b>2024</b>                                                                                        | Joint Statistical Meetings (JSM)                             |
| <b>2023</b>                                                                                        | CMStatistics; INFORMS Annual Meeting                         |
| <b><i>“Robust Outcome Optimization via Multi-Model Inverse Classification”</i></b>                 |                                                              |
| <b>2025</b>                                                                                        | INFORMS Annual Meeting                                       |
| <b><i>“Cost Restricted Feature Selection with Information Criterion”</i></b>                       |                                                              |
| <b>2026</b>                                                                                        | INFORMS Workshop on Data Science (accepted for presentation) |

## **SERVICE**

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| <b>Faculty Assembly Representative, KU School of Business</b>                                                                                                                                                        | 2026–Present |
| Represent the interests of Ph.D. students in faculty assembly meetings and participate in school-level governance, discussions, and voting.                                                                          |              |
| <b>Ad Hoc Reviewer</b>                                                                                                                                                                                               | 2024–Present |
| INFORMS Workshop on Data Science (2026);<br>INFORMS Data Mining Best Paper Competition (2026);<br>Independent Commodity Intelligence Services (ICIS) (2025);<br>International Workshop on Health Intelligence (2024) |              |

## **HONORS AND AWARDS**

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|-----------------------------------------------------------------------------|--------------|
| School of Business Best Paper Award, University of Kansas                   | 2026         |
| Max E. Fessler Dissertation Support Award, University of Kansas             | 2026         |
| John O. Tollefson Best Paper Award, University of Kansas School of Business | 2026         |
| Graduate Teaching Assistantship, University of Kansas                       | 2023–Present |

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|------------------------------------------------------------------------------|-----------|
| Graduate Research Assistantship, University of Cincinnati                    | 2020-2022 |
| Graduate Teaching Assistantship, University of Cincinnati                    | 2018-2020 |
| Graduate Teaching Assistantship, Missouri State University                   | 2015-2017 |
| 1st Place, CNAS Thesis Competition Research Award, Missouri State University | 2014      |
| CSSA Outstanding Contribution Award                                          | 2014      |

## RESEARCH AND PROFESSIONAL EXPERIENCE

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| <b>Cincinnati Children's Hospital Medical Center, Cincinnati, OH</b>                                                                                                                                                            | 2020 to 2022                |
| <b>Graduate Research Intern.</b> Collaborated with biostatisticians and physicians on statistical and bioinformatics research, applying advanced statistical methods to investigate disease and chronic-condition risk factors. |                             |
| <b>China Continent Insurance LLC, Linyi City, Shandong Province, China</b>                                                                                                                                                      | Summer 2013 and Summer 2014 |
| <b>Manager Assistant.</b> Assessed vehicle condition for depreciation. Followed up with the insured individuals regarding premium and deductibles payments.                                                                     |                             |

## ADDITIONAL INFORMATION

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**Programming and Computing:** R (Rcpp, RcppArmadillo), Python, C, C++, SQL, SAS, MATLAB, LaTeX, Microsoft Office; **Other Experience and Certification:** Insurance Agent Qualification Certificate, 2013

## REFERENCES

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| <b>Shaobo Li</b><br>Associate Professor, Analytics, Information, Operations<br>University of Kansas School of Business   <a href="mailto:shaobo.li@ku.edu">shaobo.li@ku.edu</a>                                                                                            | <b>Ben Sherwood</b><br>Associate Professor; Jack and Shirley Howard Mid-Career<br>Professor<br>University of Kansas School of Business   <a href="mailto:ben.sherwood@ku.edu">ben.sherwood@ku.edu</a> |
| <b>Debabrata "Deb" Dey</b><br>Davis Area Director, Analytics, Information, Operations;<br>Ronald G. Harper Professor of Artificial Intelligence and<br>Information Systems<br>University of Kansas School of Business   <a href="mailto:deb.dey@ku.edu">deb.dey@ku.edu</a> |                                                                                                                                                                                                       |