

# Yeonjong Shin

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| RESEARCH INTERESTS   | Approximation Theory, Uncertainty Quantification, Scientific Computing, Stochastic Approximation/Optimization, Machine learning and Data Science.   |   |
| EMPLOYMENT           | <b>Brown University</b> , Providence, RI, USA<br>Prager Assistant Professor of Applied Mathematics  | July 2018 - Present                                       |
| EDUCATION            | <b>The Ohio State University</b> , Columbus, OH, USA<br><i>Ph.D.</i> in Mathematics<br>Advisor: Dongbin Xiu   | May 2018  |
|                      | <b>Yonsei University</b> , Seoul, South Korea<br><i>B.S.</i> in Mathematics and <i>B.A.</i> in Economics  | August 2013   |
| JOURNAL PUBLICATIONS | <ol style="list-style-type: none"><li>9. J. Hou, <b>Y. Shin</b> and D. Xiu,<br/>Identifying corrupted data via k-means clustering in function approximation,<br/>(in preparation)</li><li>8. <b>Y. Shin</b> and D. Xiu,<br/>Sequential approximation via linear random measurements under noise,<br/>(in preparation).</li><li>7. <b>Y. Shin</b>, K. Wu and D. Xiu,<br/>Sequential function approximation using randomized samples,<br/><i>J. Comput. Phys.</i>, 371, 363-381 (2018).</li><li>6. K. Wu, <b>Y. Shin</b> and D. Xiu,<br/>A randomized tensor quadrature method for high dimensional polynomial approximation,<br/><i>SIAM J. Sci. Comput.</i>, 39(5), A1811-A1833 (2017).</li><li>5. <b>Y. Shin</b> and D. Xiu,<br/>A randomized algorithm for multivariate function approximation,<br/><i>SIAM J. Sci. Comput.</i>, 39(3), A983-A1002 (2017).</li><li>4. L. Yan, <b>Y. Shin</b> and D. Xiu,<br/>Sparse approximation using <math>\ell_1</math>-<math>\ell_2</math> minimization and its applications to stochastic collocation,<br/><i>SIAM J. Sci. Comput.</i>, 39(1), A229-A254 (2017).</li><li>3. <b>Y. Shin</b> and D. Xiu,<br/>Correcting data corruption errors for multivariate function approximation,<br/><i>SIAM J. Sci. Comput.</i>, 38(4), A2492-A2511 (2016).</li></ol> |   |

2. **Y. Shin** and D. Xiu,  
On a near optimal sampling strategy for least squares polynomial regression,  
J. Comput. Phys., 326, 931-946 (2016).
1. **Y. Shin** and D. Xiu,  
Nonadaptive quasi-optimal points selection for least squares linear regression,  
SIAM J. Sci. Comput. 38(1), A385-A411 (2016).

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| CONFERENCE<br>PRESENTATIONS | 1. SIAM Computational Science and Engineering, Atlanta, GA             | Feb 2017    |
|                             | 2. 12th WCCM - 6th APCOM 2016, Seoul, South Korea                      | July 2016   |
|                             | 3. 15th International Conference Approximation Theory, San Antonio, TX | May 2016    |
|                             | 4. SIAM Uncertainty Quantification, Lausanne, Switzerland              | April 2016  |
|                             | 5. 14th Copper Mountain Conference on Iterative Methods, CO            | March 2016  |
|                             | 6. ICIAM 2015, Beijing, China  | August 2015 |
|                             | 7. SIAM Computational Science and Engineering, Salt Lake City, UT      | March 2015  |

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|---------|--|-----------|
| SEMINAR | 1. Mathematics Seminar, Sungkyunkwan University, Suwon, South Korea, | July 2016 |
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| OTHER<br>EXPERIENCES | <b>The Ohio State University</b> , Columbus, OH, USA<br><i>Graduate Research Associate</i> | August 2016 - May 2018 |
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|--|---|----------------------------|
|  | <b>University of Utah</b> , Salt Lake City, UT, USA<br><i>Graduate Research Assistant</i> | January 2014 - August 2016 |
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|  | <b>University of Utah</b> , Salt Lake City, UT, USA<br><i>Graduate Teaching Assistant</i> |           |
|  | · MATH 1010: Intermediate Algebra   | Fall 2013 |

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|  | <b>Republic of Korea Army and 8th United States Army</b> , South Korea<br><i>Korean Augmentation To the United States Army</i><br>(Mandatory Military Service) | October 2009 - August 2011 |
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| REFERENCES | <b>Dongbin Xiu</b><br>Department of Mathematics<br>The Ohio State University<br>Columbus, OH, USA<br>E-mail: xiu.16@osu.edu       | <b>Akil Narayan</b><br>Department of Mathematics and<br>Scientific Computing and Imaging (SCI)<br>Institute, University of Utah<br>Salt Lake City, UT, USA<br>E-mail: akil@sci.utah.edu |
|            | <b>Ching-Shan Chou</b><br>Department of Mathematics<br>The Ohio State University<br>Columbus, OH, USA<br>E-mail: chou.160@osu.edu | <b>Xueyu Zhu</b><br>Department of Mathematics<br>University of Iowa<br>Iowa City, IA, USA<br>E-mail: xueyu-zhu@uiowa.edu  |