

Yuhan Ding

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Department of Applied Mathematics,
Illinois Institute of Technology
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EDUCATION

Ph.D. August 2010 – December 2015, Department of Applied Mathematics, Illinois Institute of Technology, Chicago, IL

Dissertation: Guaranteed Adaptive Univariate Function Approximation

Major: Applied Mathematics.

Advisor: Fred J. Hickernell, Professor.

GPA: 4.0.

M.S. in Pure Mathematics, September 2006-July 2009, Shanghai University, Shanghai, China.

B.S. in Information and Computing Science, September 2002-July 2006, Shanghai University, Shanghai, China.

FUNDING PROPOSALS

- *Funded*

- NSF-2244553, “REU Site: Summer Undergraduate Research Experience (SURE) at Illinois Tech”, PI, Awarded: \$404,893.00, May 1, 2023 to April 30, 2026.
- NSF-2316011, “Collaborative Research: Cost-Efficient and Confident Sampling for Modern Scientific Discovery”, Co-PI, Awarded: \$350,000.00, Sept. 1, 2023 to Oct 30, 2026.

RESEARCH PAPERS

- *Accepted Papers:*

- Sou-Cheng T. Choi, Yuhan Ding, Fred J. Hickernell, Jagadeeswaran Rathinavel, and Aleksei G. Sorokin, *Challenges in Developing Great Quasi-Monte Carlo Software*, 2023, arXiv:2311.06162, DOI: <https://doi.org/10.48550/arXiv.2311.06162>

- *Published Papers:*

- Xin Tong, Sou-Cheng T. Choi, Yuhan Ding, Fred J. Hickernell, and etc., *Guaranteed Automatic Integration Library (GAIL): An Open-Source MATLAB Library for Function Approximation, Optimization, and Integration*, Journal of Open Research Software, Volume: 10, Issue: 1 Page/Article: 7, 2022. DOI:<https://doi.org/10.5334/jors.381>.
- Yuhan Ding, Fred J. Hickernell, and Lluís Antoni Jiménez Rugama, *An adaptive algorithm employing continuous linear functionals*, B. Tuffin, P. L’Ecuyer (eds), Monte Carlo and Quasi-Monte Carlo Methods. MCQMC 2018. Springer Proceedings in Mathematics & Statistics, vol 324, 161-181, Springer, Cham, 2020. DOI: https://doi.org/10.1007/978-3-030-43465-6_8.

- Yuhan Ding, Fred J. Hickernell, Peter Kritzer, and Simon Mak, *Adaptive approximation for multivariate linear problems with inputs lying in a cone*, Multivariate Algorithms and Information-Based Complexity (Fred J. Hickernell and Peter Kritzer, eds.), 109-148, DeGruyter, Berlin/Boston, 2020. DOI: <https://doi.org/10.1515/9783110635461-007>.
- Sou-Cheng T. Choi, Yuhan Ding, Fred J. Hickernell, Xin Tong, (2017), "Local Adaption for Approximation and Minimization of Univariate Functions", *Journal of Complexity*, Volume 40, Special Issue: Dedicated to the memory of Joseph F. Traub, Part II, 17-33.
- N. Clancy, Y. Ding, C. Hamilton, F. J. Hickernell, and Y. Zhang, (2014), "The Cost of Deterministic, Adaptive, Automatic Algorithms: Cones, Not Balls", *Journal of Complexity*, Volume 30, Issue 1, 21-45.
- Qing-Wen Wang, Yu-Han Ding, (2008), "Least square solutions of generalized Hamiltonian quaternion matrices", *Advances in Matrix Theory and its Applications, Volume I (ISTP)*: 262-265.
- Yu-Han Ding, Qing-Wen Wang, (2008), "The complex solution to a quaternion matrix equation with application", *Mathematical Sciences Research Journal*, 12(9) : 215-224.
- *Published Software:*
 - Sou-Cheng T. Choi, Yuhan Ding, Fred J. Hickernell, Lan Jiang, Lluís Antoni Jimenez Rugama, Xin Tong, Yizhi Zhang, and Xuan Zhou, (2013 - 2021) "GAIL: Guaranteed Automatic Integration Library (Version 1.0 - Version 2.3.2)" [MATLAB Software], http://gailgithub.github.io/GAIL_Dev/.

EXPERIENCES

Associate Teaching Professor, Illinois Institute of Technology, Chicago, IL

Math 151: <i>Calculus I</i>	Spring, Fall, 2020
Math 152: <i>Calculus II</i>	Fall, 2019
Math 350: <i>Introduction to Computational Mathematics</i>	Spring, 2020-2023
Math 474: <i>Probability and Statistics</i>	Spring, 2021
Math 565: <i>Monte Carlo Methods in Finance</i>	Fall, 2019-2023
ITMD/ITMS/STAT 514: <i>Programming in Data Analytics</i>	Fall, 2021-2023; Spring, 2022-2024
SCI 497-107: <i>Machine Learning Classifiers</i>	Summer, 2019
SCI 497-111: <i>Introduction to Machine Learning</i>	Summer, 2020

Panel reviewer for the Dolciani Mathematics Enrichment Grants, Mathematical Association of America, 2023.3

Program Director, Master of Data Science, 2021.8 - now

Director, SURE (Summer Undergraduate Research Experience) REU Site, Summer, 2023- now

Director, SURE (Summer Undergraduate Research Experience) Program, Summer, 2021- 2022

Supervisor, Math Tutoring Center, 2020.8 - now

Interim Data Science Coordinator, Spring, 2020

Assistant Professor, Misericordia University, Dallas, PA

CPS 101: *Introduction to Programming* Fall, 2017-2018

CPS 121: *Computer Programming* Spring, 2018-2019

CPS 222: *Introduction to Computer Organization* Fall, 2017-2018

CPS 232: *Data Structure and Algorithm* Fall, 2018

CPS 321: *Operating System Architecture* Spring, 2019

CPS 351: *Internet Programming* Spring, 2018

CPS 432: *Database Management Design* Spring, 2018 -2019

CPS 485: *Special Topics: Introduction to Data Mining* Fall, 2017

Visiting Assistant Professor, Illinois Institute of Technology, Chicago, IL

MATH 151: *Calculus I* Spring, 2017

MATH 152: *Calculus II* Fall, 2016

Teaching Assistant, Illinois Institute of Technology, Chicago, IL

MATH 149: *Calculus/Precalculus II* Spring, 2014

MATH 151: *Calculus I* Spring, 2013 Fall, 2015

MATH 152: *Calculus II* Fall, 2012-2015 Spring, 2013-2015

MATH 350: *Introduction to Computational Mathematics* Spring, 2012

MATH 476/563: *Mathematical Statistics* Spring, 2015

Research Assistant, Illinois Institute of Technology, Chicago, IL 2012-2016

Logistics Coordinator, Spring Research Conference 2016,

Illinois Institute of Technology, Chicago, IL May 25-27, 2016

Graduate Summer School, IPAM, University of California, Los Angeles (UCLA), Los Angeles, CA

Deep Learning, Feature Learning July 9-27, 2012

Scoring Analyst, Yi Bai Li Information Technology (Beijing) Company Limited (Experian China), Shanghai Branch, Shanghai, China July 2009- July 2010

BASEL II LGD& CCF Project for Hire Purchase Portfolio of RHB Bank

BASEL II PD& LGD Project for Auto Loan of DBS Bank

BASEL II PD& LGD Project for Auto Finance of SIAM Commercial Bank

HONORS AND AWARDS

- ◇ Excellence in Teaching 2023, College of Computing, Illinois Institute of Technology, 2024.
- ◇ Excellence in Service 2022, College of Computing, Illinois Institute of Technology, 2023.
- ◇ Silver Award of Student Research Posters Competition, Department of Applied Mathematics, Illinois Institute of Technology, 2015.
- ◇ Applied Math Teaching Assistant Award, Illinois Institute of Technology, 2015.
- ◇ Shanghai University Top Grade Scholarship, Shanghai University, 2005, 2004, 2003.
- ◇ China Undergraduate Mathematical Contest in Modeling Second Prize, Shanghai, 2005.
- ◇ China Undergraduate Mathematical Contest in Modeling Third Prize, Shanghai, 2004.