JoungDong "JD" Kim

jdkim@math.tamu.edu ◇ jdkim@tamu.edu
Department of Mathematics ◇ Texas A&M University ◇ College Station, TX 77843-3368
http://www.math.tamu.edu/∼jdkim

EDUCATION

Ph.D., Applied Mathematics and Statistics *2012*
State University of New York - *Stony Brook, New York*
Advisor: Dr. Xiaolin Li
Dissertation: Modeling of Parachute Dynamics with Front Tracking Method

M.S., Mathematics *2007*
Pusan National University - *Pusan, Republic of Korea*
Advisor: Dr. YongHoon Lee
Thesis: Three Solution Theorems for singular semilinear and p-Laplacian boundary value problems

B.S., Mathematics *2005*
Pusan National University - *Pusan, Republic of Korea*

RESEARCH & TEACHING & SERVICE POSITIONS

Texas A&M University, Department of Mathematics
Instructional Associate Professor *09/2021-present*
Instructional Assistant Professor *09/2014-08/2021*
Visiting Assistant Professor *10/2012-08/2014*

State University of New York at Stony Brook, Department of Applied Mathematics and Statistics
Research Assistant *02/2008-06/2012*
Graduate Assistant *08/2007-02/2008*

Pusan National University, Republic of Korea, Department of Mathematics
Teaching Assistant *03/2007-07/2007*
Research Assistant *08/2005-11/2006*

TEACHING EXPERIENCE

Texas A&M University, Department of Mathematics Undergraduate Courses
Math152 Engineering Mathematics II (312 students), Fall 2021
Math151 Engineering Mathematics I (92 students), Fall 2021
Math308 Differential Equations (266 students, hybrid), Spring 2021
Math151 Engineering Mathematics I (696 students, hybrid), Fall 2020
Math308 Differential Equations (267 students, switched to online course), Spring 2020.

Math142 Business Calculus (572 students), Fall 2019.

Math151 Engineering Mathematics I (507 students), Spring 2019.

Math151 Engineering Mathematics I (558 students), Fall 2018.

Math151 Engineering Mathematics I (501 students), Spring 2018.

Math151 Engineering Mathematics I (301 students), Fall 2017.

Math151 Engineering Mathematics I (37 students), Summer 2017.

Math151 Engineering Mathematics I (312 students), Spring 2017.

Math151 Engineering Mathematics I (280 students), Fall 2016.

Math142 Business Calculus (121 students), Summer 2016.

Math151 Engineering Mathematics I (288 students), Spring 2016.

Math151 Engineering Mathematics I (295 students), Fall 2015.

Math142 Business Calculus (83 students), Summer 2015.

Math142 Business Calculus (422 students), Spring 2015.

Math150 Pre-Calculus (316 students), Fall 2014.

Math308 Differential Equations (21 students), Summer 2014.

Math151 Engineering Mathematics I (204 students), Spring 2014.

Math151 Engineering Mathematics I (201 students), Fall 2013.

Math151 Engineering Mathematics I (90 students), Spring 2013.

State University of New York at Stony Brook, Department of Applied Mathematics and Statistics Graduate Courses

AMS595 - Fundamentals of Computing, Fall 2010.

AMS595 - Fundamentals of Computing[1], Fall 2009.

Pusan National University, Republic of Korea, Department of Mathematics Undergraduate Course

MA24921 - Basic Calculus[2], Spring 2007.

COORDINATOR EXPERIENCE

Course Coordinator: Department of Mathematis, Texas A&M University

Math152 - Engineering Mathematics II, Fall 2021.

Math308 - Differential Equations, Spring 2020.

Math151 - Engineering Mathematics I, Spring 2018.

Math151 - Engineering Mathematics I, Spring 2016.

Week-in-review Coordinator: Department of Mathematics, Texas A&M University

Math151 Engineering Mathematics I, Spring 2020.

Math142 - Business Calculus, Fall 2020.

Math142 - Business Calculus, Spring 2020.

Math142 - Business Calculus, Fall 2019.

[1]This course is mandatory course for all graduate students of Applied Mathematics and Statistics in Stony Brook University. This course provides an introduction to several modern approaches for developing computer programs and their use to solve mathematical problems. It will cover the fundamentals of programming in MATLAB, Python, and C/C++, including scripting, basic data structures, algorithms, scientific computing, performance optimization, software engineering and program development tools.

[2]This course is a pre-calculus course for international students.

Math151 Engineering Mathematics I, Spring 2019.

Math151 Engineering Mathematics I, Fall 2018.

Math151 Engineering Mathematics I, Fall 2017.

Math151 Engineering Mathematics I, Spring 2017.

Math151 Engineering Mathematics I, Fall 2015.

Math142 - Business Calculus, Spring 2015.

Math150 - Pre-Calculus, Fall 2014.

Math Learning Center Week-in-review Coordinator: Math Learning Center, Texas A&M University

Math152 Engineering Mathematics II, Fall 2021.

Math151 Engineering Mathematics I, Fall 2021.

Math151 Engineering Mathematics I, Spring 2021.

Math151 Engineering Mathematics I, Fall 2020.

Math151 Engineering Mathematics I, Summer 2020.

Math142 Business Calculus, Spring 2020.

Supplemental Instruction Coordinator: Department of Mathematics, Texas A&M University

Math151 SI(Supplemental Instruction), Fall 2016.

Math151 FL-SI(Faculty-Led Supplemental Instruction) Session (Pilot project)[3], Spring 2016.

Program Director: Department of Mathematics, Texas A&M University

Personalized Precalculus Program(PPP)[4], 2017 - present.

MAJOR AWARDS

- Nominated to Leadership Coach of The Maroon & White Leadership Program, 2019.
- 2018 Honoring Excellence Award, Department of Residence Life, Texas A&M University, 2018.
- Nominated to FISHcamp namesake of 2018.
- Outstanding Teaching Award, Department of Mathematics, Texas A&M University, 2016.

SCHOLARLY ACTIVITIES

- ILCB(Innovation Learning Classroom Building)/21CCB(21st Century Classroom Building) Taskforce Committe fellow, Sept 2019 - present.

[3]The Faculty-Led Supplemental Instruction(FL-SI) pilot program was launched in the Spring 2016. It attempts to aid off-track engineering students who take MATH 151 and PHYS 218 concurrently in the off-semester; these students are at a high risk of not succeeding in these courses. The FL-SI program was very successful at making the at-risk engineers succeed in these courses and that it helped them to become better aligned with the on-track students. You can find a summary of the pilot program in FL-SI Result Report: `http://www.math.tamu.edu/~jdkim/FLSI-report.pdf`

[4]The Personalized Precalculus Program (PPP) at Texas A&M University is a three-week(Summer) or one-week(Winter), fully online program designed to improve the success rates of prospective students who will be taking a calculus course at Texas A&M. The short summer/winter sessions are designed to reinforce, or reteach, the prerequisite concepts and skills that are needed for students to be successful in calculus. As the director of this program, the duties are planning the program during Spring semester, making class materials and worksheets, hiring tutors, recruiting students, and supervising all online sessions during summer. This program used to serve about 200 new Aggies each yearm but it serves more than 800 students now that after I took the program director job.

- Certificate of Achievement, 2019 Teaching With Technology Calculus Summit, Pearson, New Orleans, February, 2019.
- Math150 (Pre-Calculus) Textbook Committee, Fall 2017.
- Math151 (Engineering Math I) Content Committee, Spring 2017.
- Texas Section Project NExT(New Experiences in Teaching) fellow, 2014-2015.

OUTREACH ACTIVITIES

- Organizer of Art/Crafts booth, Annual STEMFest, 2017-present.
- Organizer of Art/Crafts room, Math and Stat Fair, 2017-present.
- Invited talks[5], Math Circle, 2019.
- Volunteer/Photographer, Annual Math Contest, 2017-2019.
- Volunteer/Photographer, SMaRT camp, 2017-2019.
- Volunteer, Physics & Engineering Festival, 2015, 2016, and 2019.
- Integral Bee (Creating/Selecting the Problems), 2015-present.
- Derivative Bee (Creating/Selecting the Problems), 2015-present.

SERVICE ACTIVITIES

- Invited speaker, Christian Engineering Leaders (CEL) at Texas A&M University, Fall 2020.
- APT(Academic Professional Track) Committee, 2020-present.
- Attended PossePlus Retreat, 2019 and 2020. [6]
- Photographer of Math Department, 2015-present.
- Mentoring for Math 142 Graduate Student Instructor (Mr. Jintao Deng) ,Fall 2019.
- Invited Speaker, MSC FISH (Memorial Student Center Freshmen in Service and Hosting), October, 2016.

PUBLICATIONS

- Yan Li, I-Liang Chern, Joung-Dong Kim, and Xiaolin Li, Numerical Method of Fabric Dynamics Using Front Tracking and Spring Model, Communications in Computational Physics, Vol. 14, 2013, pp.1228-1251.
- Joung-Dong Kim, Yan Li, and Xiaolin Li, Simulation of Parachute FSI Using the Front Tracking Method, Journal of Fluids and Structures, Vol. 37, 2013, pp. 100-119, ISSN 0889-9746.

[5] Topics are provided in Presentations

[6] The PossePlus Retreat for Texas A&M University is a time where current students, faculty, and staff come together with Texas A&M POSSE scholars to engage in dialogue about an important social or political issue.

- T. Kaman, R. H. Lim, Y. Yu, D. Wang, Y. Hu, J.-D. Kim, Y. Li, L. Wu, J. Glimm, X. Jiao, X.-L. Li, and R. Samulyak, A numerical method for the simulation of turbulent mixing and its basis in mathematical theory, in Lecture Notes on Numerical Methods for Hyperbolic Equations: Theory and Applications: Short Course Book, CRC/Balekma, London, 2011, pp. 105-129. Stony Brook University Preprint number SUNYSB-AMS-11-02.

PRESENTATIONS

- Discussion about the Personalized Precalculus Program(PPP) and Active Learning in Mathematics

  Invited talk, Pusan National University, South Korea, August 2019.

- The Personalized Precalculus Program(PPP): Using technology to enhance student success

  Co-presenter, Transformational Teaching and Learning Conference, Texas A&M University, May 2019.

- Predicting Success Using Placement Tests for STEM and non-STEM Math courses.

  Co-author, 31th International Conference on Technology in Collegiate Mathematics, Scottsdale, Arizona, March 2019.

- Slope of line and its application. (For intermediate level)

  Math Circle, Texas A&M University, December, 2018.

- Slope of line and its application. (For advanced level)

  Math Circle, Texas A&M University, November, 2018.

- Difference Quotient and its application.

  AMUSE(Applied Mathematics Undergraduate Seminar), Texas A&M University, September, 2018.

- Interface Tracking Using Level Set and Fast Algorithm.

  2014 SIAM Annual Meeting, Chicago, Illinois, July 2014.

- Fast Iterative Methods for the Variable Diffusion Coefficient Equation in a Disk.

  Co-author, 2014 SIAM Annual Meeting, Chicago, Illinois, July 2014.

- Recent progress of Hybrid Fast Algorithm and its applications.

  Invited talk, Pusan National University, Republic of Korea, November 2013.

- Hybrid Fast Algorithm based on FFT-recursive-relation and its applications.

  2013 KSIAM Annual Conference, Jeju, Republic of Korea, November 2013.

- Numerical Study for parachute.

  Ninth Annual Texas Undergraduate Mathematics Conference, San Antonio, October 2013.

- Application of FFT-recursive-relation based hybrid fast algorithms to computing interfacial flows.

  2013 SIAM Annual Meeting, San Diego, California, July 2013.

- Numerical Method of Fabric Dynamics Using Front Tracking and Spring Model.

  Invited talk, University of Mississippi, May 2013.

- Simulation of Parachute Inflation Using the Front Tracking Method.

  2012 SIAM Annual Meeting, Minneapolis, Minnesota, July 2012.

- Simulation of Parachute FSI Using the Front Tracking Method.

  Invited talk, University of Arizona, May 2012.

- Modeling of Airfoil Dynamics with Front Tracking Method.

  Invited talk, National Institute for Mathematical Sciences, Republic of Korea, March 2012.

- Simulation of Parachute Inflation Using the Front Tracking Method.

  Invited talk, Ulsan National Institute of Science and Technology, Republic of Korea, March 2012.

- Modeling of Airfoil Dynamics with Front Tracking Method.

  Invited talk, Pusan National University, Republic of Korea, March 2012.

- Front Tracking Method on Fluid Structure Interaction.

  2011 SIAM Conference on Computational Science and Engineering (CSE11), Reno, Nevada, March 2011.

- Front Tracking and its Coupling with Convection Dominated Problems.

  2010 SIAM Annual Meeting (AN10), Pittsburgh, Pennsylvania, July 2010.

OTHER EXPERIENCE

- TI&E personnel (Troop Information and Education), Republic of Korea Army, Dec. 1999 - Feb. 2002.
- Army photographer, Republic of Korea Army, Dec. 1999 - Feb. 2002.

WORKSHOPS/SEMIARS PARTICIPATED

- 21CCB (21st Century Classroom Building) Fall Kickoff Event, December 2019.
- STRIDE(Strategies and Tactics for Recruiting to Improve Diversity and Excellence) training, August 2019.
- G.P.S.(Generate Professional Success) for Academic Professional Track Faculty Workshop, May 2019.

TECHNICAL SKILLS

- Programming Languages:

  C, C++, Python, Fortran, Matlab, MPI, OPENMP, HTML, Shell Script

- Operation Systems:

  Linux, Unix(several variants), Windows, Macintosh

- Graphic tools:

  Vislt, Tecplot, etc.

- Software:

  Debugging Tools: GDB(serial-parallel), DDD(Data Display Debugger)

  Tex, Latex, Matlab, Mathematica, Maple, Microsoft Office, Adobe Photoshop, etc.

OTHER PROFESSIONAL ACTIVITIES

- Member of Century club, The Association of Former Students, Texas A&M University

- Member of Mathematical Association of America (MAA)
- Member of Society for Industrial and Applied Mathematics (SIAM)
- Member of Korean Mathematical Society (KMS)
- Member of Korean Society for Industrial and Applied Mathematics (KSIAM)

OTHER INFORMATION

- **Culture/Language Experiences:** English, Japanese, Urdu, Hindi, and Korean.

APPENDIX

- Personal homepage.

  `http://math.tamu.edu/~jdkim`

- Personalized Precalculus Program (PPP) Webpage, Texas A&M University.

  `http://ppp.tamu.edu`

- A summary of pilot program, FL-SI(Faculty-Led Supplemental Instruction), Texas A&M University.

  `http://www.math.tamu.edu/~jdkim/FLSI-report.pdf`