TAEHYEONG KIM

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EDUCATION

PH. D. in Mathematics   2020. 3 - 2023. 2†
Pusan National University, Busan, Korea.

Master of Science in Mathematics   2018. 3 - 2020. 2
Pusan National University, Busan, Korea.

Bachelor of Science in Mathematics   2011. 3 - 2017. 8
University of Ulsan, Ulsan, Korea.

SKILLS AND INTERESTS

Research Interests	Numerical linear algebra, Nonlinear matrix equation, Iterative methods, Optimization problem, Data analysis, Mathematical modeling, Image processing.
Programming	Matlab
	Python
Platforms	MS Office

WORK EXPERIENCE

Matlab Student Ambassador   2020. 3 - Ongoing
MathWorks

· Promoted Matlab to students of Pusan National University.
· Ran the Matlab Facebook community.
· Hosted the Matlab event for students at Pusan National University more than twice every semester.

BOOK TRANSLATION

· Linear Algebra and Learning from Data by. Gilbert Strang (Author)   2020. 2 - 2020. 8
   - Translator and inspector.
   - Translation from English to Korean.

EDUCATION

· Python class for middle school students   2020. 9 - 2020.11
   Teached about
   - data preprocessing with `pandas` and `numpy`.
   - visualization with `matplotlib` and `seaborn`.
   - fundamentals of machine learning.
· K-MOOC TA   2018. 9 - 2018.12
                                                                                2019. 9 - 2019.12
                                                                                2020. 9 - 2020.12
   - Subject : Numerical analysis
   - Reviewed videos and captions weekly.
   - Made a quiz, midterms, and final exams.
   - Answered students' questions.

PROJECTS

Numerical Methods for Solving Matrix Equations   2018. 3 - Ongoing
Major Project

· On Newton's Method for Solving a System of Nonlinear Matrix Equations.
· On Direct Newton's Method for Solving a System of Nonlinear Matrix Equations
· Efficient Method for Solving the System of Nonlinear Matrix Equations

Projects Related to Industrial Mathematics   2018. 3 - Ongoing

- Development of an algorithm improving label arrangements in offset printing
- Development of algorithm for calculating the area of two ellipses according to rotation and translation
- A correlation analysis between infection in wild birds and in poultry farms
- An optimal route recommendation system for ships based on A* algorithm
- Neural Mechanism Mimetic Selective Electronic Nose based on Programmed M13 Bacteriophage
- Development of an algorithm for determining osteoporosis using image processing
- A Deep learning approach determining early glaucoma patients
- An Efficient Resolution of Label Printing Problem

PUBLICATION

Accepted

- Kim, Taehyeong, Sang-Hyup Seo, and Hyun-Min Kim. "On Newton's Method for Solving a System of Nonlinear Matrix Equations." East Asian mathematical journal 35.3 (2019): 341-349.
- Geun Soo Jang, Taehyeong Kim, Hyun-Min Kim, Ki Man Kong, Jeong Rye Park, Jong-Hyeon Seo, Sang-Hyup Seo, and Shin Won Yoon, "Development of an Algorithm Improving Label Arrangements in Offset Printing" International Journal of Mathematics for Industry (2020)

Under review

- Neural Mechanism Mimetic Selective Electronic Nose based on Programmed M13 Bacteriophage

Works in progress

- On Direct Newton's Method for Solving a System of Nonlinear Matrix Equations
- Efficient method for Solving the System of Nonlinear Matrix Equations
- Development of an algorithm for determining osteoporosis using image processing
- A Deep learning approach determining early glaucoma patients
- An efficient resolution of Label Printing Problem

CONFERENCE

Oral presentation

- 2019 Annual Conference of Korean Society for Mathematical Biology   2019. 6
  An optimal route recommendation system for ships based on A* algorithm
- The 9th International Congress on Industrial and Applied Mathematics   2019. 7
  An optimal route recommendation system for ships based on A* algorithm
- 2020 KMS Annual Meeting   2020.10
  Development of osteoporosis indicators using texture analysis for DEXA images of mice

Poster presentation

- 2020 KMS Annual Meeting   2020.10
  Development of osteoporosis indicators using texture analysis for DEXA images of mice