KSIAM 2019 Annual Meeting
Yeosu Venezia Hotel, Yeosu, Korea
November 8-10, 2019

SCHEDULE

▶ Opening Ceremony November 8th, 13:00-13:10 [Convention Hall]
  - Kim, Chongam (President of KSIAM)

▶ Invited Talks
  ○ Jung, Eunok (Department of Mathematics, Konkuk University)
    - The Vision and Role of Biomathematics in Biomedical Industry and Government Policy
    - November 8th, 13:10-14:00 [Convention Hall]

  ○ Kang, Myungjoo (Department of Mathematical Sciences, Seoul National University)
    - Level Set Method, Image Processing and Deep Learning
    - November 8th, 16:00-16:50 [Convention Hall]

  ○ Oh, Se Jong (Department of Aerospace Engineering, Pusan National University)
    - Application of Mathematical Modelling to CFD for Numerical Efficiency for Rotorcraft Analysis
    - November 9th, 9:00-9:50 [Convention Hall]

▶ Annual Meeting November 8th, 18:00-18:20 [Convention Hall]

▶ Panel Discussion I November 8th, 17:00-18:00 [Convention Hall]

▶ KSIAM Outstanding Young Investigator Award November 9th, 11:20-12:00 [Convention Hall]

▶ Poster Session November 9th, 14:20-15:20 [Festa]

▶ Special Sessions
  ○ Applied Algebra and Geometry
  ○ Bio-inspired computing
  ○ Combinatorial and Discrete Optimization I, II
  ○ Existence, uniqueness, regularity and stability for PDEs related to fluids
  ○ Fluid-Structure Interaction
  ○ GeoMathematics and its applications
  ○ MATLAB을 활용한 인공지능
  ○ Medical Mathematics I, II
  ○ PDE modeling, numerical simulations and related applications
  ○ Recent advances in mathematical modeling of swarming
  ○ 불연속 Galerkin / High-Order methods for PDE

▶ General Sessions
  ○ Partial Differential Equations, Applied Probability
  ○ Biomathematics, Bioinformatics, Biological and Medical Modeling
  ○ Computer Graphics and Game, IT and Its Industrial Applications, Cryptology
  ○ Industrial Engineering and Applied Mathematics
  ○ Inverse Problems, Control and Optimization
  ○ Applied Analysis
  ○ Mechanics of Compressible and Incompressible Fluids, Solid Mechanics and Elasticity
  ○ Numerical Analysis and Scientific Computation

▶ Welcome Reception : November 8th, 18:30-20:00 [Convention Hall]

주관 : 한국산업응용수학회, 부산대학교 복계 및 고등학교 수학수학센터, 성균관대학교
응용과학 및 계산과학 연구센터
후원 : 서울대학교 산업수학센터, 연세대학교 응용과학 및 계산과학 센터
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<td>13:00-13:10</td>
<td>[Convention Hall]</td>
<td>Opening Ceremony Chair: Sang Joon Shin</td>
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<td>13:10-14:00</td>
<td>[Convention Hall]</td>
<td>Plenary Talk I Chair: Hee-Dae Kwon</td>
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<tr>
<td>13:10-14:00</td>
<td>[Convention Hall]</td>
<td>The Vision and Role of Biomathematics in Biomedical Industry and Government Policy Eunok Jung (Konkuk University)</td>
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<tr>
<td>14:00-14:20</td>
<td>[Convention] Special Session :</td>
<td>Critical neuromorphic computing based on transient dynamics Pilwon Kim (UNIST)</td>
<td>Chair: Pilwon Kim</td>
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<td>Bio-inspired computing</td>
<td>Bi-criteria scheduling Kangbok Lee (POSTECH)</td>
<td>Chair: Dabeen Lee</td>
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<td>14:20-14:40</td>
<td>[Burano 1] Special Session:</td>
<td>Deep learning based methods for artifact correction in X-ray CT Hyoung Suk Park (NIMS)</td>
<td>Chair: Hyoung Suk Park</td>
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<td>Combinatorial and Discrete Optimization I</td>
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<td>Chair: Jangwon Lee</td>
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<td>14:40-15:00</td>
<td>[Burano 2] Special Session:</td>
<td>On-chip trainable analog PCM synaptic array for spiking RBM SangBum Kim (Seoul National University)</td>
<td>Chair: Pilwon Kim</td>
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<td>Medical Mathematics I</td>
<td>Cliques for multi-term linearization of 0-1 multilinear program for boolean logical pattern generation Kedong Yan (Nanjing University of Science and Technology)</td>
<td>Chair: Dabeen Lee</td>
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<td>14:40-15:00</td>
<td>[Burano 3] Special Session:</td>
<td>Deep learning based methods for artifact correction in X-ray CT Hyoung Suk Park (NIMS)</td>
<td>Chair: Hyoung Suk Park</td>
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<td>MATLAB을 활용한 인공지능 머신러닝의 이해 및 건전성 예측관리 시스템 개발 Caleb Kim (MathWorks)</td>
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<td>15:00-15:20</td>
<td>[Convention Hall]</td>
<td>Challenges and opportunities in Memristor-based Artificial Neural Network Hardware Shinhyun Choi (KAIST)</td>
<td>Chair: Pilwon Kim</td>
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<td>Binary mixing sets and linear programs with probabilistic constraints Dabeen Lee (IBS)</td>
<td>Chair: Dabeen Lee</td>
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<td>15:00-15:20</td>
<td>[Convention Hall]</td>
<td>Automated method for classifying liver fibrosis stages using ultrasound b-mode images Hyeuknam Kwon (Yonsei University)</td>
<td>Chair: Hyoung Suk Park</td>
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<td>Optimal Sampling and Clustering Algorithms in the Stochastic Block Model Se-Young Yun (KAIST)</td>
<td>Chair: Dabeen Lee</td>
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<td>15:20-15:40</td>
<td>[Convention Hall]</td>
<td>Electrical impedance tomography based abdominal obesity estimation using deep learning Hyeuknam Kwon (Yonsei University)</td>
<td>Chair: Hyoung Suk Park</td>
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<td>15:55-16:00</td>
<td>[Convention Hall]</td>
<td>KSIAM-KUMGOK Award Ceremony Chair: Hee-Dae Kwon</td>
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<td>Presenter: Ha, Yeon Soon (Chairman, KUMGOK Academico-Cultural Foundation)</td>
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<td>16:00-16:50</td>
<td>[Convention Hall]</td>
<td>Plenary Talk II Chair: Hee-Dae Kwon</td>
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<td>Level Set Method, Image Processing and Deep Learning Myungjoo Kang (Seoul National University)</td>
<td>Chair: Hee-Dae Kwon</td>
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<td>16:50-17:00</td>
<td>[Convention Hall]</td>
<td>Coffee Break</td>
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<td>17:00-18:00</td>
<td>[Convention Hall]</td>
<td>Panel Discussion I Chair: Chongam Kim</td>
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<td>Future Agenda of Applied Mathematics and 4th Industrial Revolution Hi jun Choe / Chair of CMAC, Yonsei University</td>
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<td>Hyun-Min Kim / Chair of FFMIMC, Pusan National University</td>
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<td>R. S. Myong / Chair of ACTRC, Gyeongsang National University</td>
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<td>Dosang Joe / Chair of NIMS 산업수학연구본부</td>
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<td>Min Sun Yeom / Chair of KISTI 슈퍼컴퓨팅응용센터</td>
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<td>18:00-18:20</td>
<td>[Convention Hall]</td>
<td>Annual Meeting Chair: Bongsoo Jang</td>
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<td>18:30-20:00</td>
<td>[Convention Hall]</td>
<td>Welcome Reception Chair: Hee-Dae Kwon</td>
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<td>09:00-09:50</td>
<td>[Convention Hall] Special Session : Combinatorial and Discrete Optimization II</td>
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<td>09:50-10:00</td>
<td>Coffee Break</td>
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| 10:00-10:20 | Constant-Factor Approximation Algorithms for Parity-Constrained Facility Location Problems  
              Hyung-Chan An  
              (Yonsei University)  
              Chair: Dabeen Lee |
| 10:20-10:40 | On minimal highly connected spanning subgraphs in dense digraphs  
              Dong-yeap Kang  
              (KAIST)  
              Chair: YunkYong Hyon |
| 10:40-11:00 | Stable sets in graphs with bounded odd cycle packing number  
              Tony Huynh  
              (Monash University)  
              Chair: Kyungkeun Kang |
| 11:00-11:20 | Rank-width: Algorithmic and structural results  
              Sang-il Oum  
              (KAIST)  
              Chair: Mityoun Jung |
| 10:00-10:20 | Automated ultrasound assessment of amniotic fluid volume using machine learning  
              Hyunchul Cho  
              (Yonsei University)  
              Chair: YunkYong Hyon |
| 10:20-10:40 | GAN-based Data Normalization for Robust Deep Learning  
              Min Gyu Lee  
              (Yonsei University)  
              Chair: Mityoun Jung |
| 10:40-11:00 | Mathematical modeling of tuberculosis to evaluate vaccine strategies in Korea  
              Jonggu Lee  
              (NIMS)  
              Chair: Mityoun Jung |
| 11:00-11:20 | 태양열을 활용한 가계용 기반 에육은열 계발차원 토론                 2019  
              YunkYong Hyon  
              (NIMS)  
              Chair: Mityoun Jung |

**Session Schedule**

- **09:00-09:50**
  - [Convention Hall] Special Session : Combinatorial and Discrete Optimization II
  - Chair: Dabeen Lee

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    - YunkYong Hyon (NIMS)
  - Chair: Mityoun Jung
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<td>[Festa] Special Session : PDE modeling, numerical simulations and related applications</td>
<td>Jae-Myung Ahn</td>
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| 15:20-15:40  | 1. A Data-Driven Approach For A Macroscopic Conductivity Model Utilizing Finite Element Approximation / Jeon, Young Jae (Kyung Hee Univ)  
           | 2. The pricing of valuable options under a hybrid stochastic volatility model / Kim, Donghyun (Pusan National Univ)  
           | 3. Efficient mesh generation using an Body Centered Cubic mesh / Yang, Hee Jun (Kyung Hee Univ)  
           | 4. Asymmetric analysis on stress concentration and Steklov-Dirichlet first eigenvalues for eccentric annuli / Hong, Jiho (KAIST)  
           | 5. Pattern formation on the moving surface / Kim, Hyundong (Korea Univ)  
           | 6. 금융시장자산의 국내 주택매매시장 적용 가능성 연구 / Woo Jun-hui, Li Qi (Pusan National Univ)  
           | 7. A Feature selection method based on topological aspect of feature manifolds / Park, Jungho (Seoul National Univ)  
           | 8. A Feature selection method based on topological aspect of feature manifolds / Park, Jaemin (Seoul National Univ)  
           | 9. Detecting Malaria Infection using Deep Learning / Choi, Myungie (Seoul National Univ)  
           | 10. 자료 동화 소개 / Cho, Eun Hae (Pusan National Univ)  
           | 11. Pricing Two-Asset Three-Asset ELS In Android Application / Lyu, Jeang (Korea Univ)  
           | 12. Multiphase image segmentation using a simple PDE / Park, Jintae (Korea Univ)  
           | 13. A series formula for inversion of Radon transform with optical Gaussian beam / Jeon, Kihyeon (Kyungpook National Univ)  
           | 14. Phase-field simulation of ice melting / Lee, Chaeyoung (Korea Univ)  
           | 15. Mathematical modeling of Ebola Virus Disease outbreak in the Republic of Korea / Ko, Youngsuk (Konkuk Univ)  
           | 16. Photoacoustic Tomography With Line Detector / Kim, Juyeon (Kyungpook National Univ)  
           | 17. A C0-Interior Penalty Method For The Stationary Quasi-Geostrophic Equation: A Posteriori Error Analysis / Kim, Dohyun (Yonsei Univ)  
           | 18. Topological Data Analysis of Coronary Atherosclerosis / Kim, Haneed (Seoul National Univ)  
           | 19. Numerical simulation of shallow water equation / Go, Minji (Korea Univ)  
           | 20. Numerical Study of Euler system with maximal density constraint / Cho, Inrae (Korea Univ)  
           | 21. Extended Kalman Filter and Ensemble Kalman Filter / Kim, Jiheon (Pusan National Univ)  
           | 22. Finding The Shortest Path : Dijkstra’s Algorithm and A* Algorithm / Kim, Soyeon (Pusan National Univ)  
           | 23. Characterization of p-scheme by using thin residue / ABBAS WASIM (Pusan National Univ)  
           | 24. Optimal cost estimation for PV plant operation with tariff incentive / Mannan Jamshaid (Pusan National Univ)  
           | 25. Generalizations of inequalities For Polynomials Not Vanishing In A Disk / SHERKH MOHD IBRAHIM (Pusan National Univ)  
           | 26. Parameter estimation for Biology System / Meiyan Jiang (Pusan National Univ)  
           | 27. 인공신경망을 이용한 미분방정식의 몫 변/ Go woejin, Bok JinSeong (Sungkyunkwan Univ)  
<pre><code>       | 28. Enriched Immersed Finite Element Method for Hele-Shaw Flows with Two Different Fluids / Gwenghyun Jo (Kunsan National Univ) |
</code></pre>
<p>| 15:40-16:00  | [Burano 1] Special Session : GeoMathematics and its applications       | Chair: Sangil Kim |
| 16:00-16:20  | [Burano 2] Special Session : Fluid-Structure Interaction               | Chair: Sang Joon Shin |
| 14:40-15:20  | [Convention Hall] Special Session : PDE modeling, numerical simulations and related applications | Jae-Myung Ahn |
| 15:40-16:40  | [Convention Hall] Ceremony for Best Poster Award                        | Chair: Bongsu Jang |</p>
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<td>[Convention Hall]</td>
<td>Panel Discussion II</td>
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<td>Chair: Bongsoo Jang</td>
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<td>Future Agenda of Industrial and Applied Mathematics in Korea</td>
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<td>Kim, Chongam / Kang, Myungjoo / Shin, Sang Joon / Park, Eun-Jae</td>
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