Seulip Lee

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Education

University of California, Irvine — Irvine, USA
Ph.D. in Mathematics, Advisor: Prof. Long Chen — Sep. 2015 - Current

Yonsei University — Seoul, Republic of Korea
Master in Computational Science and Engineering, Advisor: Prof. Eun-Jae Park — Mar. 2013 - Aug. 2015

- Thesis: "C^0 Interior Penalty Finite Element Methods for Nonlinear Fourth-Order Differential Equations"

Yonsei University — Seoul, Republic of Korea
B.S. in Mathematics — Mar. 2006 - Feb. 2013

Publications and Work in Progress

[1] "Edge-averaged virtual element schemes for convection-diffusion problems", (with S. Cao and L. Chen), Article manuscript in progress.

[2] J. Ahn, **S. Lee**, and E.-J. Park, "C^0 interior penalty methods for a dynamic nonlinear beam model", in *Applied Mathematics and Computation*, Dec. 2018, pp. 685–700.

Presentations

University of California, Irvine — Irvine, USA
Presentations in Prof. Chen's Group Meeting — Nov. 2017 - Current

- A diagonally-implicit time integration scheme for space-time moving finite elements
- The edge-averaged virtual element methods for convection-diffusion problems
- The pollution errors in Helmholtz equations
- The VEM counterpart of the EAFE scheme
- The SUPG scheme and EAFE method for convection-diffusion problems
- FEM and CIP-FEM for Helmholtz equation with high wave number and perfectly matched layer truncation
- The plane wave discontinuous Galerkin methods
- The optimized virtual element method for the Helmholtz equation
- Convergence of a continuous Galerkin method for nonlinaer wave equations
- The streamline diffusion methods for convection-diffusion problems
- The nonconforming virtual element method

University of California, Irvine — Irvine, USA
Advancement Presentation — Sep. 2018

- Continuous-mixed finite element methods for wave equations with TMAC scheme

KSIAM 2014 Annual meeting — Jeju, Republic of Korea
Poster Presentation — Nov. 2014

- Discontinuous Galerkin methods for solving large deformation elastic beam problems

Yonsei University — Seoul, Republic of Korea
Poster Presentations in CSE — Sep. 2012 - Sep. 2014

- C^0 interior penalty method for solving large deformation elastic beam problems
- The positiveness of numerical scheme on positive data in convection-diffusion equations
- High quality mesh generation and its applications (FEM, other shapes)

Teaching

- **Teaching Associate** at UC Irvine — Spring 2021 - Current
  Numerical Differential Equations Lab (MATH 107L)
- **Teaching Assistant** at UC Irvine — Fall 2017 - Current
  Calculus I (MATH 2A)
  Calculus II (MATH 2B)
  Multivariable Calculus I (MATH 2D)
  Multivariable Calculus II (MATH 2E)
  Introduction to Linear Algebra (MATH 3A)
  Calculus in Life Science (MATH 5B)
  Numerical Analysis I (MATH 105A)
  Numerical Analysis II (MATH 105B)
  Numerical Differential Equations (MATH 107)
  Optimization I (MATH 110A)
  Optimization II (MATH 110B)
  Introduction to Group Theory (MATH 120A)
  Introduction to Ring & Field Theory (MATH 120B)
- **Grader** at UC Irvine — Fall 2015 - Summer 2017
  Elementary Differential Equations (MATH 3D)
  Introduction to Abstract Mathematics (MATH 13)
  Probability and Stochastic Process I (MATH 130A)
  Probability and Stochastic Process II (MATH 130B)
  Analytic Function Theory I - Graduate Course (MATH 220A)
  Analytic Function Theory II - Graduate Course (MATH 220B)
  Analytic Function Theory III - Graduate Course (MATH 220C)

Conference and Workshop Attended

- The 2021 Joint Mathematics Meetings — Jan. 6-9, 2021
- CCMA Workshop on Mathematical Machine Learning and Application — Dec. 14-16, 2020
- The Finite Element Circus — Nov. 6-7, 2020
- AMS Fall Western Sectional Meeting — Nov. 9-10, 2019
- Southern California Applied Mathematics Symposium — Apr. 27, 2019
- ICERM Celebrating 75 Years of Mathematics of Computation (Funded by ICERM) — Nov. 1-3, 2018
- SIAM Conference on Nonlinaer Waves and Coherent Structures — Jun. 11-14, 2018
- KSIAM 2014 Annual Meeting — Nov. 20-23, 2014
- ICM 2014 Satellite Conference — Aug. 9-12, 2014
- KSIAM 2013 Annual Meeting — Nov. 22-24, 2013
- KSIAM 2013 Spring Conference — May 24-25, 2013
- KSIAM 2012 Spring Conference — May 18-19, 2012

Research Experiences

Yonsei University — Seoul, Republic of Korea
Research Assistant — Mar. 2013 - Aug. 2015

- Discontinuous Galerkin methods for fourth-order beam problems

Yonsei University — Seoul, Republic of Korea
CSE Internship Research Program — Jan. 2012 - Feb. 2013

- Advanced numerical methods for differential equations

Honors and Awards

- UCI Department Dissertation Fellowship ($6000) — 2020
- ICERM at Brown University Travel Grant ($800) — 2018
- Korea National Brain Korea 21Plus Project Fellowship — 2013, 2014
- Korea National World Class University Project Fellowship — 2013
- Yonsei CSE Internship Scholarship — 2012
- Lotte Foundation Scholarship — 2011, 2012
- Honors Student of Yonsei University — 2011, 2012

Computer Skills

- **MATLAB:** Professional proficient
- **Python:** Proficient
- **MATHEMATICA:** Elementary proficient

Languages

- **Korean:** Native speaker
- **English:** Fluent

Extracurricular Activities

- SIAM Student Chapter at UC Irvine — Aug. 2018 - Jul. 2019
  Vice president of the chapter
- Korean Graduate Students Association at UC Irvine — Sep. 2017 - Oct. 2018
  President of the association
- Republic of Korea Army — May 2007 - Apr. 2009