# Shengchao Lin

Department of Computational and Applied Mathematics, Rice University

## CONTACT INFORMATION

Address: 6100 Main Street - MS 134, Houston, Texas 77005-1892
Office: Duncan Hall 2118, Rice University
Email: shengchao.lin@rice.edu
Website: https://www.caam.rice.edu/∼sl107/
Phone: +1-832-314-6860

## EDUCATION

**Rice University, Houston, TX** *August 2017 - Present*
Ph.D., Computational and Applied Mathematics, May 2022 (Expected)
Advisor: Matthias Heinkenschloss

M.A., Computational and Applied Mathematics, October 2019
Advisor: Matthias Heinkenschloss
Thesis: Parareal-Based Preconditioner for Linear Quadratic Optimal Control Problems
GPA: 4.03/4.0

**Peking University, Beijing, China** *September 2013 - July 2017*
B.S., Mathematics, July 2017

## RESEARCH

**Optimization of Time-Dependent Partial Differential Equations** *June 2018 - Present*
Advisor: **Matthias Heinkenschloss**, Noah G. Harding Chair and Professor, CAAM, Rice University

**Structured Linearization and Algorithm for Gyroscopic and Palindromic Eigenvalue Problems** *January 2017 - July 2017*
Advisor: **Yunfeng Cai**, Assistant Professor, School of Mathematical Science, Peking University

**Methods for Wind Power Forecasting** *October 2014 - July 2017*
Advisor: **Zaiwen Wen**, Associate Professor, BICMR, Peking University

## PUBLICATIONS

S. Lin, Parareal-Based Preconditioners for Linear Quadratic Optimal Control Problems. Master Thesis, Rice University, 2019.

## PRESENTATIONS

"*Multigrid-in-Time for Optimal Control Problems*", Minisymposium Talk, SIAM CSE Conference, March 2021 (accepted)

"*Multigrid-in-Time for Optimal Control Problems*", Minisymposium Talk, SIAM TX-LA Section Conference, October 2020

"*Increase Parallelism through Time Domain Decomposition for Optimal Control Problems*", Poster, Rice Oil & Gas HPC Conference, Poster Session, March 2020

"*Parareal-Based Preconditioners for Linear Quadratic Optimal Control Problems*", Talk, Sandia National Laboratories, July 2019

"*Multilevel Time Domain Decomposition for the Parallel Solution of Optimal Control Problems*", Poster, Rice Oil & Gas HPC Conference, Poster Session, March 2019

"*Parareal Algorithm*", Talk, CAAM Graduate Seminar, February 2019

## TEACHING AND SERVICE

**CAAM, Rice University**
Vice President, SIAM Chapter, 2020
Recruitment Weekend Representative, 2018, 2019
Grader, CAAM 565 Convex Optimization, Fall 2020
Grader, CAAM 454/554 Iterative Methods for Systems of Equations and Unconstrained Optimization, Spring 2020
Grader, CAAM 453/550 Numerical Analysis I, Fall 2019
Grader, CAAM 336 Differential Equations in Science and Engineering, Spring 2019
Grader, CAAM 335 Matrix Analysis, Fall 2018, Spring 2018, Fall 2017

## AWARDS AND FELLOWSHIPS

**Excellent Academic Award**, Peking University, 2017
**Excellent Graduate Award**, Peking University, 2017
**Yizheng Fellowship**, Peking University, 2016
**Meritorious Fellowship**, Peking University, 2015
**Freshman Fellowship**, Peking University, 2013

## SKILLS & RELEVANT COURSEWORK

**Programming and Languages**
Familiar: C, C++, Mathematica
Proficient: Python, MATLAB, LaTeX
**Coursework**
Analysis, Advanced Linear Algebra, Advanced Numerical Analysis, Linear and Integer Programming, Convex Optimization, Functional Analysis, Numerical Solutions of PDEs, Finite Element Methods, PDE Simulation and Optimization, Probability

## MEMBERSHIPS

SIAM