Stanford

# Sangjoon Lee

Postdoctoral Scholar, Aeronautics and Astronautics

## Bio

### BIO

Sangjoon "Joon" Lee is a postdoctoral scholar at the Department of Aeronautics and Astronautics. He was a CTR Fellowship recipient at the Center for Turbulence Research (CTR) from October 2024 to December 2025. He earned his Ph.D. in Mechanical Engineering with a Designated Emphasis in Computational and Data Science and Engineering from the University of California, Berkeley. His expertise is grounded in fluid mechanics and computational science, covering areas such as computational fluid dynamics (CFD), heat transfer analyses, vortex/turbulence physics and instabilities, numerical algorithms, and data-driven hydro-/aerodynamic design optimization.

### PROFESSIONAL EDUCATION

- PhD/MS, University of California Berkeley (2024)
- BS/BBA, Seoul National University (2018)

### STANFORD ADVISORS

- Juan Alonso, Postdoctoral Faculty Sponsor

### LINKS

- LinkedIn: https://www.linkedin.com/in/sjoonl/

## Publications

### PUBLICATIONS

- **Room surface convective heat transfer with ceiling fans and its effect on radiant cooling systems** *JOURNAL OF BUILDING PERFORMANCE SIMULATION*
  Duarte Roa, C., Raftery, P., Lee, S., Senel Solmaz, A.
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- **A Simulation Study on Condensation Risk in Radiant Cooling Panels with Elevated Air Movement** *E3S WEB OF CONFERENCES (IAQVEC 2026)*
  Park, J., Lee, S., Li, J., Chen, K. W., Izuhara, I., Schiavon, S.
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- **Airfoil optimization using Design-by-Morphing with minimized design-space dimensionality** *JOURNAL OF COMPUTATIONAL DESIGN AND ENGINEERING*
  Lee, S., Sheikh, H.
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- **Transient growth of a wake vortex and its initiation via inertial particles** *JOURNAL OF FLUID MECHANICS*
  Lee, S., Marcus, P. S.

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- **Flow in ribbed cooling channels with additive manufacturing-induced surface roughness** *PHYSICS OF FLUIDS*
  Lee, S., Baek, S., Ryu, J., Song, M., Hwang, W.
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- **Global Stability Analysis for Multidimensional Flow using an Augmented State Vector Formulation** *CTR ANNUAL RESEARCH BRIEFS*
  Lee, S., Song, H., Lele, S. K.
  Center for Turbulence Research, Stanford University.2025: 313-323
- **Topology-Aware Permeability Modeling in Structured Porous Media for Passive Flow Control** *CTR ANNUAL RESEARCH BRIEFS*
  Lee, S., Vijay, S.
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- **Bayesian-Optimized Riblet Surface Design for Turbulent Drag Reduction via Design-by-Morphing With Large Eddy Simulation** *JOURNAL OF MECHANICAL DESIGN*
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- **Development of an efficient immersed-boundary method with subgrid-scale models for conjugate heat transfer analysis using large eddy simulation** *INTERNATIONAL JOURNAL OF HEAT AND MASS TRANSFER*
  Lee, S., Hwang, W.
  2019; 134: 198-208
- **Experimental and Numerical Investigation of the Flow in a Trailing Edge Ribbed Internal Cooling Passage** *JOURNAL OF TURBOMACHINERY-TRANSACTIONS OF THE ASME*
  Baek, S., Lee, S., Hwang, W., Park, J.
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- **EXPERIMENTAL AND NUMERICAL INVESTIGATION OF THE FLOW IN A TRAILING EDGE RIBBED INTERNAL COOLING PASSAGE**
  Baek, S., Lee, S., Hwang, W., Park, J., ASME
  AMER SOC MECHANICAL ENGINEERS.2018
- **Airfoil optimization using Design-by-Morphing** *JOURNAL OF COMPUTATIONAL DESIGN AND ENGINEERING*
  Sheikh, H., Lee, S., Wang, J., Marcus, P. S.
  2023; 10 (4): 1443-1459