# Xingyu Su

## Personal Info


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## Education

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|---|---|
| 2019/09-present | **Tsinghua Unveristy**, Beijing, P.R. China<br>Ph.D. in Center for Combustion Energy, Department of Energy and Power Engineering |
| 2018/07-2018/08 | **Duke Univeristy**, Durham, NC, USA<br>research intern in Department of Mechanical Engineering and Materials Science |
| 2015/09-2019/07 | **Tsinghua Unveristy**, Beijing, P.R. China<br>B.S. in Department of Energy and Power Engineering<br>Minor in Computer Technology and Application |

## Research Experience

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|---|---|
| 2020/03-present | Kinetic parameter optimization via neural ordinary differential equation (Neural ODE)<br>Advisor: Prof. Zhuyin Ren<br>Neural networks; Reaction mechanism; Parameter optimization |
| 2019/10-2020/03 | Quantification of modeling uncertainties in turbulent flames through successive dimension reduct<br>Advisor: Prof. Zhuyin Ren<br>Active subspace; Uncertainty propagation; Turbulent combustion |
| 2018/11-2020/05 | Uncertainty analysis in mechanism reduction via active subspace and transition state analyses<br>Advisor: Prof. Zhuyin Ren<br>Mechanism reduction; Uncertainty quantification; Active subspace; Transition state |
| 2018/07-2018/08 | Image based sorter<br>Advisor: Prof. Tony Jun Huang, Duke Univeristy<br>Real-time image processing; Droplet tracking Experiment |

## Publications


[1] **X. Su**, W. Ji, Z.Ren. Uncertainty analysis in mechanism reduction via active subspace and transition state analyses[J]. Combusion and Flame, 2021, 227:135-146, [paper], [code].

[2] H. Zhu, P. Zhang, Z. Zhong, J. Xia, J. Rich, J. Mai, **X. Su**, Z. Tian, H. Bachman, J. Rufo, Y. Gu, P. Kang, K. Chakrabarty, T.P. Witelski, T.J. Huang. Acoustohydrodynamic tweezers via spatial arrangement of streaming vortices. Science Advances, 2021, 7(2):eabc7885, [paper].

[3] N. Wang, Q. Xie, **X. Su**, Z. Ren. Quantification of modeling uncertainties in turbulent flames through successive dimension reduction[J]. Combustion and Flame, 2020, 222:476-489, [paper].

[4] P. Zhang, W. Wang, H. Fu, J. Rich, **X. Su**, H. Bachman, J. Xia, J. Zhang, S. Zhao, J. Zhou, T.J. Huang. Deterministic droplet coding via acoustofluidics[J]. Lab on a chip, 2020, 20(23):4466-4473, [paper].

[5] P. Zhang, C. Chen, **X. Su**, J. Mai, Y. Gu, Z. Tian, H. Zhu, Z. Zhong, H. Fu, S. Yang, K. Chakrabarty, T.J. Huang. Acoustic streaming vortices enable contactless, digital control of droplets[J]. Science Advances, 2020, 6(24):eaba0606, [paper].

## Work Experience

2017/07-2017/08 Hesai Photonics Technology, work as intern in hardware department

## Abilities and Skills

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| Program: | C / C++ / Python / Fortran / Rust / Html |
| Software: | Matlab / Fluent / Solidworks / AutoCAD |
| Hardware: | Arduino / Raspberry PI |

## Honors and Awards

2017/11 National First Prize of China Undergraduate Mathematical Contest in Modeling, China
2017/10 Scholarship for Technology Innovation Excellence, Tsinghua University
2017/04 Third Prize of 35th Challenge Cup, Tsinghua University

## Extracurricular Activities

2019/07-2020/07 **Club Leader** at Skyworks Club, Tsinghua University

## Hobbies

Roller Skating, Skating, Skiing, Swiming