Qing XIA

EDUCATIONS

2021-present **XI'AN JIAO TONG UNIVERSITY(XJTU), CHINA**
-Department of Applied Mathematics
-School of Mathematics and Statistics
-Ph.D candidate *Advisor: Yibao Li*

2019-2021 **XI'AN JIAO TONG UNIVERSITY(XJTU), CHINA**
-Department of Applied Mathematics
-School of Mathematics and Statistics
-Master candidate *Advisor: Yibao Li*

Sept 2015-Jun 2019 **XI'AN JIAO TONG UNIVERSITY(XJTU), CHINA**
-Department of Applied Mathematics
-School of Mathematics and Statistics
-Bachelor Degree

RESEARCH INTEREST

His research interests mainly lie in **Topology optimization** in additive manufacturing and **Multi-scale multi-physics coupled computation**. His research interests also include computer vision on the digital twin, entropy analysis and numerical analysis. His main work is to project the physical models from real space to digital space for equivalent experiments, which can eliminate the environment and material cost constraints of real physical experiment.

MAGNUM OPUS

Remark: # is the first author, ∗ is the corresponding author.

Multi-physical fields coupled computation

• ***Qing Xia***#, *Qian Yu, Yibao Li∗, A second-order accurate, unconditionally energy stable numerical scheme for binary fluid flows on arbitrary curved surfaces, Computer Methods in Applied Mechanics and Engineering, 384 (2021) 113987. (JCR Q1, Impact Factor 6.756).*

• ***Qing Xia***#, *Junxiang Yang, Yibao Li∗, On the conservative phase-field method with the N-component incompressible flows, Physics of Fluids, 35 (2023) 012120. (JCR Q1, Impact Factor 4.980).*

• ***Qing Xia***#, *Junseok Kim, Binhu Xia, Yibao Li∗, An unconditionally energy stable method for binary incompressible heat conductive fluids based on the phase–field model, Computers and Mathematics with Applications, 123 (2023) 26-39. (JCR Q1, Impact Factor 3.440).*

• ***Qing Xia***#, *Junseok Kim, Yibao Li∗, Modeling and simulation of multicomponent immiscible flows based on a modified Cahn-Hilliard equation, European Journal of Mechanics-B/Fluids, 95 (2022) 194-204. (Impact Factor 2.598).*

Topology optimization & Additive manufacturing

• ***Qing Xia***#, *Gangming Sun, Qian Yu, Yibao Li∗, Thermal-fluid topology optimization with unconditional energy stability and second-order accuracy via phase-field model, Communications in Nonlinear Science and Numerical Simulation, 116 (2023) 106782. (JCR Q1, Impact Factor 4.186).*

Personnel Infos:

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qingxia151701@outlook.com
ResearchGate:
https://www.researchgate.net/profile/Qing-Xia-12
Google Scholar:
https://scholar.google.com/citations?user=pWXuL4EAAAAJ&hl=zh-CN

Language:

Mandarin: *Maternal*
English: *Fluent*

Computer skills:

•**Programing Language:** C/Python/C++, Matlab, Mathicmatica
•**Working Software:** Excel/PowerPoint/Word, PS, and AfterEffect
•**Scientific Software:** Abaqus, COMSOL

Proficient in using LaTeX and power user of LINUX

Expertise field:

Phase field method, Finite Difference Method, Numerical analysis, Hydrodynamic topology optimization, Computational Fluid dynamics with , Image processing under convection

Hobby:

Jogging, Traveling, Photographing, Fitness, Guitar

• ***Qing Xia#**, Gangming Sun, Junseok Kim, Yibao Li∗, Multi-scale modeling and simulation of additive manufacturing based on fused deposition technique, Physics of Fluids, In revision. (JCR Q1, Impact Factor 4.980).*
• *Yu Qian#, **Qing Xia**, Yibao Li∗, A phase field-based systematic multiscale topology optimization method for porous structures design, Journal of Computational Physics, 466 (2022) 111383. (JCR Q1, Impact Factor: 4.645).*
• *Yibao Li#, **Qing Xia**, Sungha Yoon, Chaeyoung Lee, Bingheng Lu, Junseok Kim∗, Simple and efficient volume merging method for triply periodic minimal structures, Computer Physics Communications, 264 (2021) 107956. (JCR Q1, Impact Factor: 4.717).*

Computer vision

•*Yibao Li#, **Qing Xia**, Sungha Yoon, Junseok Kim∗, A simple and efficient fingerprint image restoration method based on a phase-field model, Pattern Recognition, 123 (2020) 108405. (JCR Q1, Impact Factor 7.740).*
•*Jin Wang#, **Qing Xia**∗, Binhu Xia, Fast Image Restoration Method Based on the L0, L1, and L2 Gradient Minimization, Mathematics, 10 (2022) 3107. (Impact Factor 2.884).*

PATENTS

• Yibao Li, Zhengyuan Shi, **Qing Xia**, Bingheng Lu, A rapid tooth - gum segmentation method for invisible braces.(Chinese Patent)
• Yibao Li, Rui Liu, **Qing Xia**, An automatic target prediction algorithm based on multiple detectors.(Chinese Patent)

TECHING EXPERIENCE

Teaching Assistant

Master course, Xi'an Jiaotong University, School of Mathematics and Statics.
• Numerical Analysis(A)
Instructor: Prof. Dr. Yibao Li, Iharbour, Xi'an, Shaanxi Province, China, Fall 2020.
• Numerical Analysis(B)
Instructor: Prof. Dr. Yibao Li, Iharbour, Xi'an, Shaanxi Province, China Fall 2019.

HONOURS, AWARDS & PROJECTS

⇒Nov 2022	*Outstanding Model for the Doctoral students of Xi'an Jiaotong University(2022), **Top of Ph.D. Candidate***
⇒Oct 2022	*National Scholarship for Doctoral students(2022)*
⇒May 2022	*The Fundamental Research Funds for the Central Universities(No. XYZ022022005)*
⇒May 2020	*Outstanding student cadre of Xi'an Jiaotong University(2020)*
⇒Sep 2019	*Outstanding Graduate of Xi'an Jiaotong University(2019)*