

## **Personnel Infos:**

Homepage: https://gingxiaxjtu.com Email: xiaqing151701@stu.xjtu.edu.cn qingxia151701@outlook.com qingxia151701@gmail.com ResearchGate: https://www.researchgate.net /profile/Qing-Xia-12 Google Scholar: https://scholar.google.com /citations?user=pWXuL4EAA AAJ&hl=zh-CN ORCID: https://orcid.org/0000-0003-1608-415X

#### 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 *BT<sub>E</sub>X* and power user of *LINUX* 

# Qing XIA EDUCATIONS

Sept 2021-Present	XI'AN JIAO	TONG	UNIVERSITY(XJTU), CHINA
-Department of Applied M	lathematics		
-School of Mathematics a	nd Statistics		
-Ph.D candidate			Advisor: Prof. Dr. Yibao Li
Sept 2019-Jun 2021	XI'AN JIAO	TONG	UNIVERSITY(XJTU), CHINA
-Department of Applied M	lathematics		
-School of Mathematics a	nd Statistics		
-Master candidate			Advisor: Prof. Dr. Yibao Li
Sept 2015-Jun 2019	XI'AN JIAO	TONG	UNIVERSITY(XJTU), CHINA
-Department of Applied M	lathematics		
-School of Mathematics a	nd Statistics		
-Bachelor Degree			

# **RESEARCH INTEREST**

Qing Xia is a researcher specializing in **topology optimization** for 3D printing and **multi-scale multi-physics coupled computation**. He extends his expertise to the application of computer vision in digital twins, as well as to entropy and numerical analysis. His pioneering work facilitates the transfer of physical models to the digital realm, enabling cost-effective virtual experiments that bypass real-world constraints. Since 2019, Qing has published **24** SCI papers in well-known journals such as *Comput. Methods Appl. Mech. Eng., J. Comput. Phys.,* and *Phys. Fluids.* His research enriches academic discourse in computational science and advanced manufacturing.

# 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, Comput. Methods Appl. Mech. Eng., 384 (2021) 113987. (JCR Q1, IF 6.756).

• **Qing Xia**#, Junxiang Yang, Yibao Li\*, On the conservative phase-field method with the N-component incompressible flows, Phys. Fluids, 35 (2023) 012120. (JCR **Q1**, IF 4.980). [Highly Cited]

• 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, Comput. Math. Appl., 123 (2023) 26-39. (JCR Q1, IF 3.440).

• **Qing Xia**#, Junseok Kim, Yibao Li\*, Modeling and simulation of multicomponent immiscible flows based on a modified Cahn-Hilliard equation, Eur. J. Mech. B-Fluid., 95 (2022) 194-204. (JCR **Q2**, IF 2.598).

•Qing Xia#, Yuehan Liu, Junseok Kim, Yibao Li\*, Binary thermal fluids computation over arbitrary surfaces with second-order accuracy and unconditional energy stability based on phase-field model, J. Comput. Appl. Math., (2023). (JCR Q1, IF 2.037).

### **Expertise field:**

Phase field method, Finite Difference Method, Numerical analysis, Hydrodynamic topology optimization, Computational fluid dynamics, Image processing 3D reconstruction

#### Hobby:

Jogging, Traveling, Photographing, Fitness, Guitar

#### Teaching Assistant:

Master course, Xi'an Jiaotong University. • 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.

### **Chinese Patents:**

Yibao Li, Zhengyuan Shi, Qing Xia, Bingheng Lu, A rapid tooth - gum segmentation method for invisible braces.
Yibao Li, Rui Liu, Qing Xia, An automatic target prediction algorithm based on multiple detectors. •Yibao Li#, Rui Liu, **Qing Xia**, Chenxi He, Zhong Li\*, First- and secondorder unconditionally stable direct discretization methods for multi-component Cahn-Hilliard system on surfaces, J. Comput. Appl. Math., 401 (2022) 113778. (JCR **Q1**, IF 2.037).

**Topology optimization & Additive manufacturing** 

• **Qing Xia**#, Gangming Sun, Junseok Kim, Yibao Li\*, Multi-scale modeling and simulation of additive manufacturing based on fused deposition technique, Phys. Fluids, 35 (2023) 034116. (JCR **Q1**, IF 4.980, Cover Article/Featured/Scilight Article of AIP publishing).

• Qing Xia#, Xiaoyu Jiang, Yibao Li\*, A modified and efficient phase field model for the biological transport network, J. Comput. Phys., (2023). (JCR Q1, IF 4.645).

• Qing Xia#, Gangming Sun, Qian Yu, Yibao Li\*, Thermal-fluid topology optimization with unconditional energy stability and second-order accuracy via phase-field model, Commun. Nonlinear Sci., 116 (2023) 106782. (JCR Q1, IF 4.186).[Highly Cited]

• Qing Xia, Junxia Zhu, Qian Yu, Junseok Kim, Yibao Li#, Triply periodic minimal surfaces based topology optimization for the hydrodynamic and convective heat transfer, Commun. Nonlinear Sci., 131 (2024) 107819.(JCR Q1, IF 4.260)

• Yu Qian#, **Qing Xia**, Yibao Li\*, A phase field-based systematic multiscale topology optimization method for porous structures design, J. Comput. Phys., 466 (2022) 111383. (JCR **Q1**, IF 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, Comput. Phys. Commun., 264 (2021) 107956. (JCR **Q1**, IF 4.717).

•Bo You#, **Qing Xia**, Continuous Data Assimilation Algorithm for the Two Dimensional Cahn–Hilliard–Navier–Stokes System, Appl. Math. Opt., 85 (2022) 1-19.(JCR **Q1**, IF 3.582)

#### **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 Recogn., 123 (2020) 108405. (JCR **Q1**, IF 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. (JCR **Q2**, IF 2.884).

•Yibao Li#, Kang Qin, **Qing Xia**, Junseok Kim\*, A second-order unconditionally stable method for the anisotropic dendritic crystal growth model with an orientation-field, Appl. Numer. Math., 184 (2022) 512-526.(JCR **Q1**, IF 2.443)[Highly Cited]

# HONOURS, AWARDS & PROJECTS

$\Rightarrow$ Nov 2023	Academic Star Award of XJTU(Top 0.1%)
$\Rightarrow$ Oct 2023	National Scholarship for Doctoral students( <b>Top 1%</b> )
$\Rightarrow$ Nov 2022	<i>Outstanding Model for the Doctoral students</i> ( <b>Top 0.1%</b> )
$\Rightarrow$ Oct 2022	National Scholarship for Doctoral students( <b>Top 1%</b> )
⇒May 2022	The Fundamental Research Funds for the Central
	Universities(No. XYZ022022005)( <b>Top 0.1%</b> )
$\Rightarrow$ Oct 2021	Alumni Scholarship of 1987 Class( <b>Top 5%</b> )
⇒May 2020	Outstanding student cadre of XJTU( <b>Top 5%</b> )
$\Rightarrow$ Oct 2019	Freshman Scholarship( <b>Top 10%</b> )
$\Rightarrow$ Sep 2019	Outstanding Graduate of Xi'an Jiaotong University( <b>Top 5%</b> )