**TANGQI SHI**

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## EDUCATION

- **MPhil in Biomedical Engineering & Imaging Sciences** ----------*10/2022 – 01/2026*
- **King's College London**, UK
  - **MAIN COURSE:** Machine Learning for Healthcare Applications.
  - **SUPERVISORS:** Dr. Thomas Booth & Prof. Tom Vercauteren
  - **THESIS:** Longitudinal Automated Segmentation and RANO Treatment Response Assessment of Glioblastoma.
- **MEng in Software Engineering**----------*09/2019 -- 07/2022*
- **Xi'an Jiaotong University**, China ***(Project 985)***
  - **SUPERVISOR:** Dr. Zhongyu Li
  - **MAIN COURSES (GPA: 3.41/4.0):** Data Mining, Database Systems and Application Software Process and Management, Probability and Mathematical Statistics.
  - **THESIS:** Research on pathological cell segmentation based on attention embedding priori and semi-supervised multi-scale fusion.
- **BEng in Computer Science and Technology**----------*09/2015 -- 07/2019*
- **Zhengzhou University**, China ***(Project 211)***
  - **SUPERVISOR:** Prof. Xuexiang Li
  - **MAIN COURSES (GPA: 3.54/4.0):** Further Mathematics, Algorithm Design, Linear Algebra, Data Structure, Artificial Intelligence, Computer Graphics, Discrete Mathematics.
  - **THESIS:** An SSM-based approach to implement a snack sales and management system.

## EXPERIENCE

- **Visiting Research Associate**----------*01/2026 – present*

**Biomedical Engineering & Imaging Sciences, King's College London, United Kingdom**
Supervisor: Dr. Thomas Booth & Prof. Tom Vercauteren

- **Research Intern**----------*07/2021-10/2021*

**Department of Computer Science, University of Cambridge, United Kingdom**
Supervisor: Prof. Pietro Liò

## REASERCH INTERESTS

- AI for Healthcare
- Machine Learning
- Medical Image Analysis

## PUBLICATIONS (RESEARCH EXPERIENCES)

- **Shi T,** Kujawa A, Linares C, et al. Automated longitudinal treatment response assessment of brain tumors: a systematic review[J]. Neuro-oncology, 2025: noaf037. **(IF = 13.4)**
  1. Emphasized the role of machine learning in enhancing precision and efficiency in neuro-oncology longitudinal assessments.
  2. Highlighted the necessity for further research to address biases and enhance clinical applicability.
- **Shi T,** Li C, Xu D, et al. Fine-grained histopathological cell segmentation through residual attention with prior embedding[J]. Multimedia Tools and Applications, 2022, 81(5): 6497-6511. **(CCF-C)**
  1. Combined multiscale convolution and dilated convolution to mine global and local features.
  2. Introduced the residual attention assigning a group of weight coefficients to mining deep features.
  3. Introduced the strategy of extraction of prior information twice to further improve the quality of features.
- Li C, Zhou Y, **Shi T,** et al. Unsupervised domain adaptation for the histopathological cell segmentation through self-ensembling[C]//MICCAI Workshop on Computational Pathology.

PMLR, 2021: 151-158.

1. Proposed a novel unsupervised domain adaptation framework through self-ensembling for unlabeled images.
2. Applied generative adversarial networks crossing different tissues to get more semantic information.
3. Introduced conditional random field as post-processing to preserve the local consistency on the outputs.

***Preprint***

- **Shi T,** Lio P. UESA-Net: U-Shaped Embedded Multidirectional Shrinkage Attention Network for Ultrasound Nodule Segmentation[J]. arXiv preprint arXiv:2509.22763, 2025.
  1. Proposed a novel U-shaped framework by skipping connection to form information complementarity.
  2. Aggregated multiple-directions details with prior knowledge to provide fine-grained details for the lesion area.
  3. Used the different threshold strategy to obtain more semantic information in the encoder and decoder.
- Kujawa A, **Shi T,** Booth T C, et al. RANO2.0-assist: A 3D Slicer Extension for (semi-)automatic Assessment of Response to Glioma Treatment. Journal of Open Source Software, May 2025. [DOI:10.5281/zenodo.15411078]
  1. A 3D Slicer extension developed to enable (semi-)automatic response assessment of gliomas based on the updated RANO 2.0 criteria.
  2. Integrated image registration, multi-class tissue segmentation, lesion matching, and bi-dimensional product measurement, and supports interactive correction.
  3. Evaluation on a dataset of 19 glioma cases showed that 79% of response classifications were correct without manual adjustment.

***Manuscript in preparation***

- **Shi T,** Kujawa A, Roman A, et al. Opti-autoRANO: Longitudinal Automated Segmentation and RANO Treatment Response Assessment of Glioblastoma.
  1. Proposed a fully automated platform for glioblastoma segmentation and longitudinal treatment-response assessment from multi-modal MRI.
  2. Employed novel circular constraints, hole-filling, and optimized perpendicular-pair strategies under RANO 2.0 to address current limitations.
  3. Showed strong agreement with expert assessments of tumor burden.

## SKILLS

◆ **Languages:** Python, C++, Java, Bash, Linux, SQL

◆ **Deep Learning Frameworks:** PyTorch, TensorFlow, Keras

◆ **Libraries & Software:** SimpleITK, NiBabel, MONAI, matplotlib, ANTsPy, scikit-image, ITK-SNAP, 3D Slicer, RadiAnt DICOM Viewer.

◆ **Conferences:** Two first-author poster presentations at the European Association of Neuro-Oncology (EANO).

◆ **English Skills:** TOEFL iBT 110 (Reading 29, Listening 30, Speaking 21, Writing 30)

◆ **Collaborations:** Extensive experience with radiologists from King's College Hospital and St Thomas' Hospital.

## REWARDS

**International & National level**
King's–China Scholarship Council (CSC) Scholarship (2022–2025)
Kaggle Computer Vision Medal, Cassava Leaf Disease Classification (2021)
Qualified for exemption from the examination and recommended for Master's studies (2019)
**Region level (provincial)**
Graduate with Honor, Henan Province (Top 2%, 2019)
Excellent Student, Henan Province (Top 2%, 2018)
**University level**
Graduate with Honor, Xi'an Jiaotong University (2022)
Most Outstanding Graduate, Zhengzhou University (Top 1/312, 2019)
Outstanding Social Service Individual, Zhengzhou University (Top 1/312, 2018–2019)
First Prize Scholarship, Xi'an Jiaotong University & Zhengzhou University
Excellent Student, Zhengzhou University (every year from 2015-2019)