Workshop Title: CMMCA2025: The 4th Workshop on Computational Mathematics Modeling in Cancer Analysis
Workshop Date: Saturday, September 27, 2025 (13:30 – 18:00)
Venue: DCC1 building, 2nd floor, Room 204

(Tentative process)

Session 1 Title: Keynote Session

Session Chairs: Wenjian Qin, Chao Li, Jia Wu, Nazar Zaki

Time	**Paper Title**
13:30–13:45	**Open Remarks**
13:45-14:20	**Keynote:** Computational Modeling of Breast Cancer Images: From Heuristics to Biology Prof. Shandong Wu, University of Pittsburgh
14:20-14:55	**Keynote:** Towards Generalizable Multi-Omics Modeling for Radiation Therapy Prof. Jing Cai, Hong Kong Polytechnic University
14:55-15:30	**Keynote:** Cone-beam CT Intelligent Imaging for Radiation Oncology Prof. Tianye Niu, University of Science and Technology of China
15:30-16:00	**Coffee Break**

Session 2 Title: Oral Session

Session Chairs: Wenjian Qin

Time	**Paper Title**
16.00-16:20	**Oral 1 - Jonas Weidner** A Lightweight Optimization Framework for Estimating 3D Brain Tumor Infiltration
16:20-16:40	**Oral 2 - Valentin Septiers** A data-driven approach to optimise parameters of a computational digital twin model in response to SBRT on MR-Linac
16:40-17:00	**Oral 3 - Anran Liu, Xiaofei Wang** Score-based Diffusion Model for Unpaired Virtual Histology Staining
17:00-17:20	**Oral 4 - Xueren Zhang** CT Image Segmentation Using Frequency Domain Feature-Assisted Selective Long Memory State Space Model
17:20-17:40	**Oral 5 – Xidong Wu, Hao Chen** OG-SAM: Enhancing Multi-Organ Segmentation with Organogenesis-Based Adaptive Modeling
17:40-18:00	**Oral 6 - Guantian Huang** Region-aware Diagnosis of Clinically Significant Prostate Cancer via Semi-supervised Learning Segmentation

Posters:

FMIC-AI: Annotation-Free Tumor Cell Detection in Fluorescence Microscopy via Self-Supervised Anomaly
*Kuang, Yinglan; Chen, Lin; Tang, Dongjiang; Lu, Xing**

Redefining spectral unmixing for in-vivo brain tissue analysis from hyperspectral imaging
Hartenberger, Martin; Huzeyfe, Ayaz; Ozlugedik, Fatih; Caredda, Charly; Giannoni, Luca; Lange, Frederic; Lux, Laurin; Weidner, Jonas; Berger, Alex; Kofler, Florian; Menten, Martin; *Montcel, Bruno; Tachtsidis, Ilias; Ruckert, Daniel; Ezhov, Ivan**

Towards Robust Skin Lesion Classification: Lesion Segmentation, Mole Collision Simulation and Hierarchical Learning
Nguyen, Hang; Fricker, Paul; Nguyen, Zung; Defresne, Marianne; Pahde, Frederik; Bonin, Serena; Wolfe, Jonathan; Zalaudek, Iris; Tanzmann, Skye; Azzalini, Eros*

Key Clinical Parameters Detection and Ovarian Tumor Benign/Malignant Classification in Multi-Modal Ultrasound Images via a Multi-Task Model
Qian, Chunjun; He, Lulu; Meng, Xianglian; Yu, Mengxia; Wu, Xiuhua; Shi, Yanyun*

CoMoSeg: Anatomical Consistency and Cross Modality Guidance for Robust Brain Tumor Segmentation Using Partially Labeled MR Sequences
Weng, Zehao; Gu, Dongdong; Chen, Yuzhong; Yuan, Siqing; Xie, Chen; Cao, Zehong; Zhang, Zhenguo; Kong, Jinwei; Xue, Zhong; Shen, Dinggang*

GraphMMP: A Graph Neural Network Model with Mutual Information and Global Fusion for Multimodal Medical Prognosis
*Shan, Xuhao; Ge, Ruiquan; Liu, Jikui; Wu, Linglong; Zhang , Chi ; Liu, Siqi; Qin, Wenjian; Min, Wenwen; Elazab, Ahmed; Wang, Changmiao**

Dual-Guided 3D Liver CT Image Generation for Medical Analysis
*Song, Zhizhen; Zhu, Jingke; Huang , Wenyuan; Qin, Wenjian**

HaDM-ST: Histology-Assisted Differential Modeling for Spatial Transcriptomics Generation
*Liu, Xuepeng; Jiang, Zheng; Zhu, Pinan; Liu, Hanyu; Li, Chao**

Projection-Driven Robust Motion Compensation for CBCT using a Patient-Specific Model Learned from Prior Scans
*Shao, yilin**

Revealing New Possibilities for Breast MRI Enhancement: Mamba- Driven Cross-Attention GAN with VMKANet
PU, Yao; ZHU, Yifan; QU, Jingguo; WANG, Xiang; LI, Wen; ZHAO, Mayang; YU, Peixin; LI, Zihan; TENG, Xinzhi; ZHANG, Xinyu; ZHANG, Jiang; PENG, Tao; CAI, Jing; REN, Ge*

Hierarchical Brain Structure Modeling for Predicting Genotype of Glioma
*Tang, Haotian; Chen, Jianwei; Tang, Xinrui; Wu, Yunjia; Miao, Zhengyang; Li, Chao**