



# MIUA 2022

## Conference Programme

<https://www.miua2022.com/>

### Wednesday 27th July 2022

8:00 – 15:00	Registration Desk Opens
9:00 – 9:15	Opening Ceremony
9:15 – 10:15	<b>Oral Session 1: Biomarker Detection</b> <b>(Chair: Bartłomiej Papież University of Oxford)</b> <b>9:15 - 9:35</b> Multimodal cardiomegaly classification with image-derived digital biomarkers. Duvieusart, Benjamin; Krones, Felix H; Parsons, Guy; Tarassenko, Lionel; Papież, Bartłomiej W; Mahdi, Adam <b>9:35 - 9:55</b> Proton Density Fat Fraction of Breast Adipose Tissue: Comparison of the Effect of Fat Spectra and Initial Evaluation as a Biomarker. Gordon, Isobel C; Ralli, George P; Fernandes, Carolina; Herlihy, Amy; Brady, Michael <b>9:55 - 10:15</b> Revisiting the Shape-Bias of Deep Learning for Dermoscopic Skin Lesion Classification. Lucieri, Adriano; Schmeisser, Fabian; Balada, Christoph Peter; Siddiqui, Shoaib Ahmed; Ahmed, Sheraz; Dengel, Andreas
10:30 – 11:00	☕ Coffee Break & Industrial Booth Exhibition
11:00 – 12:00	<b>Oral Session 2: Novel Imaging, Image Registration and Reconstruction</b> <b>(Chair: Emma Wang, University of Cambridge)</b> <b>11:00 - 11:20</b> Recursive Deformable Image Registration Network with Mutual Attention. Zheng, Jian-Qing; Wang, Ziyang; Huang, Baoru; Vincent, Tonia; Lim, Ngee Han; Papież, Bartłomiej W <b>11:20 - 11:40</b> Faster Diffusion Cardiac MRI with Deep Learning-based breath hold reduction. Tanzer, Michael; Ferreira, Pedro; Scott, Andrew; Khaliq, Zohya; Dwornik, Maria; Pennell, Dudley; Yang, Guang; Rueckert, Daniel; Nielles-Vallespin, Sonia <b>11:40 - 12:00</b> Simultaneous Semantic and Instance Segmentation for Colon Nuclei Identification and Counting. Liu, Lihao; Hong, Chenyang; Aviles-Rivero, Angelica I; Schönlieb, Carola-Bibiane
12:00 – 12:50	Break & Industrial Booth Exhibition
13:00 – 14:00	<b>Keynote Prof. Polina Golland (MIT)</b>
14:00 – 15:00	<b>Poster Session &amp; ☕ Coffee Break &amp; Industrial Booth Exhibition</b>

- 15:00 – 16:00 **Oral Session 3: Image Interpretation**  
**(Chair: Yingying Fang, Imperial College London)**  
**15:00 - 15:20** Class Distance Weighted Cross-Entropy Loss for Ulcerative Colitis Severity Estimation. Polat, Gorkem; Ergenc, Ilkay; Kani, Haluk Tarik; Alahdab, Yesim Ozen; Atug, Ozlen; Temizel, Alptekin  
**15:20 - 15:40** CellCentroidFormer: Combining Self-attention and Convolution for Cell Detection. Wagner, Royden; Rohr, Karl  
**15:40 - 16:00** Self-Supervision and Multi-Task Learning: Challenges in Fine-Grained COVID-19 Multi-Class Classification from Chest X-rays. Ridzuan, Muhammad; Bawazir, Ameera A; Gollini Navarrete, Ivo; Almakky, Ibrahim; Yaqub, Mohammad
- 16:00 – 18:00 **WiMIUA Workshop**  
**Keynote Prof. Fiona Gilbert (University of Cambridge)**  
**Keynote Dr. Yueming Jin (University College London)**  
**Poster Session**  
**Hors d'oeuvre Closing Event WiMIUA Workshop**

## Thursday 28th July 2022

- 8:30 – 15:00 Registration Desk Opens
- 9:00 – 10:00 **Oral Session 4: Image Segmentation**  
**(Chair: Rihuan Ke, University of Bristol)**  
**9:00 - 9:20** Ultrasonography Uterus and Fetus Segmentation with Constrained Spatial-Temporal Memory FCN. Kong, Bin; Wang, Xin; Wang, Xin; Yang, Haoyu; Cao, Kunlin; Song, Qi; Yin, Youbing  
**9:20 - 9:40** Fitting Segmentation Networks on Varying Image Resolutions using Splatting Brudfors, Mikael; Balbastre, Yaël; Ashburner, John; Rees, Geraint; Nachev, Parashkev; Ourselin, Sebastien; Cardoso, Jorge  
**9:40 - 10:00** A Novel Framework for Coarse-Grained Semantic Segmentation of Whole-Slide Images. Bashir, Saad; Raza, Shan; Shaban, Muhammad; Khurram, Ali; Rajpoot, Nasir
- 10:00 – 10:15 ☕ Coffee Break & Industrial Booth Exhibition
- 10:15 – 11:10 **Oral Session 5: Generative Adversarial Network, Transformer and New Models**  
**(Chair: Jin Yueming, University College London)**

**10:15 - 10:35** A Deep Generative Model of Neonatal Cortical Surface Development. Fawaz, Abdulah; Robinson, Emma C; Williams, Logan ZJ; Edwards, A. David  
**10:35 - 10:55** Polyp2Seg: Improved Polyp Segmentation with Vision Transformer. Mandujano Cornejo, Vittorino; Montoya, Javier  
**10:55 - 11:15** From astronomy to histology: adapting the FellWalker algorithm to deep nuclear instance segmentation. Yeung, Michael; Watts, Todd; Yang, Guang

11:10 – 12:10 **Keynote Prof. Alejandro Frangi (University of Leeds)**

12:10 – 12:25 Flash Podium Talk Microsoft

12:25 – 13:00 Break & Industrial Booth Exhibition

13:00 – 13:20 Abstract Submissions: Flash Talks

13:20 – 14:10 Abstract Submissions: Poster Session

14:10 – 15:10 **Oral Session 6: Image Classification  
(Chair: Mohammad Yaqub, Mohamed bin Zayed University of Artificial Intelligence)**

**14:10 - 14:30** Deep Bayesian Active-learning-to-rank for Endoscopic Image Data. Kadota, Takeaki; Hayashi, Hideaki; Bise, Ryoma ; Tanaka, Kiyohito; Uchida, Seiichi

**14:30 - 14:50** Improving Image Representations via MoCo Pre-Training for Multimodal CXR Classification. Dalla Serra, Francesco; Jacenków, Grzegorz; Dalton, Jeffrey; Deligianni, Fani; O'Neil, Alison Q

**14:50 - 15:10** Multi-scale Graph Neural Networks for Mammography Classification and Abnormality Detection. Pelluet, Guillaume; Rizkallah, Mira; Tardy, Mickael; Acosta, Oscar; Mateus, Diana

15:20 – 16:30 **Poster Session & ☕ Coffee Break & Industrial Booth Exhibition**

16:30 – 17:30 **Microsoft Research Workshop  
Gala Dinner**

## Friday 29th July 2022

8:30 – 15:00 Registration Desk Opens

9:00 – 10:00 **Oral Session 7: Image Enhancement, Quality Assessment, and Data Privacy  
(Chair: Soeren Dittmer, University of Cambridge/ University of Bremen)**

**9:00 - 9:20** Privacy Preserving and Communication Efficient Information Enhancement for Imbalanced Medical Image Classification Li, Xiaochuan; Ke, Yuan

**9:20 - 9:40** Non-iterative Blind Deblurring of Digital Microscope Images with Spatially Varying Blur Kaynar, Hasan Furkan; Geissler, Peter; Demaret, Laurent; Seybold, Tamaray; Stechele, Walter

**9:40 - 10:00** Low-effort re-identification techniques based on medical imagery threaten patient privacy. Martínez Esmeral, Laura Carolina; Uhl, Andreas

10:00 – 10:15 ☕ Coffee Break & Industrial Booth Exhibition

10:15 – 11:05 **Oral Session 8: Radiomics, Predictive Models, and Quantitative Imaging**

**(Chair: Anna Breger, University of Cambridge)**

**10:15 - 10:35** Correlation between IBSI morphological features and manually-annotated shape attributes on lung lesions at CT. Bianconi, Francesco; Fravolini, Mario L.; Pascoletti, Giulia; Palumbo, Isabella; Scialpi, Michele; Aristei, Cynthia; Palumbo, Barbara

**10:35 - 10:55** Large-scale Patch-wise Pathological Image Feature Dataset with a Hardware-agnostic Feature Extraction Tool. Huo, Yuankai; Zhu, Zheyu; Liu, Quan; Deng, Ruining; Asad, Zuhayr; Cui, Can; Yao, Tianyuan

**10:55 - 11:15** Predicting Myocardial Infarction using Retinal OCT Imaging. Maldonado Garcia, Cynthia L; Ravikumar, Nishant; Frangi, Alejandro F

11:05 – 11:15 Break

11:15 – 12:15 **Keynote Prof. Sotirios Tsafaris (University of Edinburgh)**

12:15 – 13:00 Break

13:00 – 14:30 **Industrial Panel (MathWorks, Microsoft, Nvidia, Aiforia)**  
**Moderator: Prof. Sir John Aston (University of Cambridge)**

14:30 – 15:30 **Poster Session & ☕ Coffee Break & Industrial Booth Exhibition**

15:30 – 16:30 **Oral Session 9: Image-Guided Intervention**

**(Chair: Carlos Reyes Aldasoro, City University of London)**

**15:30 - 15:50** A user interface for automatic polyp detection based on deep learning with extended vision. Krenzer, Adrian

**15:50 - 16:10** Using deep learning on X-ray orthogonal coronary angiograms for Quantitative. Coronary Analysis. Busto, Laura; González-Nóvoa, José A.; Juan-Salvadores, Pablo; Jiménez, Víctor; Íñiguez, Andrés; Veiga, Cesar

**16:10 - 16:30** FCN-Transformer Feature Fusion for Polyp Segmentation. Sanderson, Edward; Matuszewski, Bogdan J

16:30 – 17:00 Closing Ceremony and Awards