

IEEE Workshop on AI & VR in Medicine (IEEE WARM) Call for Papers

Location and date

The workshop IEEE-WARM will take place during the First IEEE International Conference on Artificial Intelligence and Virtual Reality that will be held from December 10-12th, 2018 in Taichung City, Taiwan.

IEEE-WARM is a half-day workshop: <https://myyc.ai.wixsite.com/ieeewarm>

Description

Artificial intelligence (AI) and virtual reality (VR) are two of the enabling technologies rapidly growing recently. Not limited to only deep learning and machine learning, AI here can also be traditional such as Bayesian Approach, Genetic Algorithm, Evolution Methods and so on. Similarly, VR covers a whole spectrum from virtual reality, augmented reality (AR), mixed reality (MR), augmented virtuality (AV), to real virtuality (RV, also known as 3D printing). This workshop aims to establish a platform promoting the marriage of AI and VR for the application in medicine. These medical applications include diagnosis, surgery and intervention, rehabilitation, training, patient education, and so on. WARM invites researchers, educators, clinicians, policy makers and other relevant professionals joining the workshop to contribute their original research for the possible sharing at the platform and to explore potential collaboration among the participants.

Scope

The workshop topics include but are not limited to:

- AI + VR in Medical Imaging
- AI + VR in Medical Image Processing
- AI + VR in Medical Visualization
- AI + VR in Image-based Diagnosis
- AI + VR in Pre-treatment Planning
- AI + VR in Image-guided Surgery
- AI + VR in Minimally Invasive Intervention
- AI + VR in Non-destructive Therapy
- AI + VR in Robotics Surgery
- AI + VR in Rehabilitation
- AI + VR in Medical Training
- AI + VR in Pain Therapy & Mediation
- AI + VR in Patient Education

Important Dates

- Submission deadline: October 12th, 2018 (23:59 UTC)
- Notifications: October 22nd, 2018
- Final submissions: October 31st, 2018
- Workshop: December 10-12th, 2018 (concrete date TBD)

Instructions for submission

Authors are invited to submit a 1 to 4 pages technical workshop paper in double-column IEEE format following the official [IEEE Manuscript Formatting guidelines](#). All submissions will go through a double-blind peer-review process. Authors of accepted papers are expected to attend the conference and present their paper at the workshop.

Please email a PDF of your submission to aivr@uci.edu, including [IEEE-WARM] in the subject line.

In case of questions, you can also send an email to the workshop organizers at MYYCai@ntu.edu.sg or z.yumak@uu.nl.

Proceedings and Copyright

Accepted papers will be included in the conference proceedings and will appear on IEEE Xplore. Authors will also need to sign the IEEE copyright form (i.e., you must own copyright to all parts and the manuscript must be original work and not currently under review elsewhere). For more information, please see the submission instructions on the IEEE AIVR conference website.

Registration

Please see the IEEE AIVR conference registration page for details on attending the conference and/or this workshop.

Workshop Program (tentative, times might change to afternoon)

8:30 - 9:30	Arrival and registration
9:00 - 9:10	Welcome
9:10 - 10:00	Invited speaker
10:00 - 10:30	Coffee break
10:30 - 12:00	Presentations (15 mins each including Q &A)
12:00 - 12:50	Discussion and future directions
12:50 - 13:00	Closing remarks

Program Committee

- Aung Myint Oo, Tan Tuck Seng Hospital, Singapore
- Wenyu Chen, A*STAR Institute of Infocomm Research, Singapore
- Patricia Chiang, Nanyang Technological University, Singapore
- Shiaofen Fang, Indiana University - Purdue University, USA
- Cédric Fleury, Université Paris-Sud, France
- Frank Guan, Nanyang Technological University, Singapore
- Dora Hermes, Stanford University, USA
- Weimin Huang, A*STAR Institute of Infocomm Research, Singapore

- Tanja Nijboer, Utrecht University, The Netherlands
- Yung-Kang Shen, Taipei Medical University, ROC
- Qi Tian, A*Star Institute of Infocomm Research, Singapore
- Yimin Wang, Shanghai University, China
- Jianhuang Wu, Shenzhen Advanced Institute of Technology, China
- Zhongke Wu, Beijing Normal University, China
- Joe Yeong, Singapore General Hospital, Singapore
- Zerrin Yumak, Utrecht University, The Netherlands
- Jing Zhang, Sichuan University, China
- Jianmin Zheng, Nanyang Technological University, Singapore
- Liang Zhong, National Heart Center, Singapore
- James Zhou, A*STAR Institute of Infocomm Research, Singapore

Organizers:



Dr. Yiyu Cai is an associate professor at the School of Mechanical & Aerospace Engineering at Nanyang Technological University, Singapore. He has over 20 years of experience doing research and development in VR + AI for applications in medicine, engineering and education. Back in middle 1990s, he and his collaborators pioneered the VR research for image-guided minimally vascular intervention with several patents granted. He and his students developed a tactile VR simulator for training of intra-cardiac intervention which was featured in IEEE Computer Graphics & Application. His innovation in the use of

VR to assist children with autism in their social communication and learning is well published in leading journals such as IEEE Transactions on Neural System & Rehabilitation Engineering. He has given numerous keynote and invited speeches internationally. In 2004, Yiyu Cai was instrumental in the establishment of the ACM SIGGRAPH Conference on Virtual-Reality Continuum and Applications in Industry (VRCAI) and co-chaired VRCAI'2004 in Singapore. He was the main organizer of the 2007 Asia Symposium on Computer-assisted Surgery. He was elected co-president of the International Simulation and Gaming Association (ISAGA) and co-chaired the 40th ISAGA annual conference in Singapore. Currently, he is actively involved in the community of Medical Image Computing and Computer Assisted Intervention (MICCAI).



Dr. Zerrin Yumak is an assistant professor at the Department of Information and Computing Sciences at Utrecht University, the Netherlands. She obtained a Ph.D. degree in Computer Science from MIRALab, University of Geneva, Switzerland and was a post-doc researcher at the Swiss Federal Institute of Technology in Lausanne and Institute for Media Innovation at Nanyang Technological University, Singapore. She is doing research on interactive virtual characters and social robots as well as character animation for the past 12 years. She has been an Associate Editor of the Visual Computer and

Computer Animation and Virtual Worlds journals. She is a program co-chair of the Computer Animation and Social Agents conference 2019 that will be organized in Paris, France.