SCHEDULE

of the

9TH ANNUAL CONFERENCE ON COMPUTER VISION AND INTELLIGENT SYSTEMS

on

DECEMBER 5 AND 6, 2023

Day 1 — Tuesday, December 5, in E7 Hub & Lecture Hall (online / in-person hybrid).

Time	Event	Title / Author(s)
08:50 – 09:00	Opening Remarks	**Alexander Wong**, M.A.Sc., Ph.D., P.Eng., Canada Research Chair in Artificial Intelligence and Medical Imaging, Member of the College of the Royal Society of Canada, Professor at the University of Waterloo, Co-Director of the Vision and Image Processing (VIP) Research Group.
09:00 – 10:00	Oral Presentations	*Context-Aware Augmentation for Contrastive Self-Supervised Representation Learning* by **Sepanj, Hadi; Fieguth, Paul**.
		Unsupervised Methods for Fly Sperm Motility Analysis by **Thomson, John W; Park, Jinman; Magdanz, Veronika; Clausi, David A**.
		COVIDx CXR-4: An Expanded Multi-Institutional Open-Source Benchmark Dataset for Chest X-ray Image-Based Computer-Aided COVID-19 Diagnostics by **Wu, Yifan; Gunraj, Hayden; Tai, Chi-en A; Wong, Alexander**.
10:00 – 11:00	Oral Presentations	*VIP-HTD : A Public Benchmark for Multi-Player Tracking in Ice Hockey* by **Prakash, Harish**.
		The Effects of Label Errors in Training Data on Model Performance and Overfitting by **Pellegrino, Nicholas; Zhao, Nolen; Fieguth, Paul**.
		Out-of-Focus Camera Calibration by **Schmalenberg, Ryan; Zelek, John**.
11:00 – 12:00	Oral Presentations	*Towards Agile Human Pose Estimation: A Benchmark Study in Ice Hockey Analytics* by **Balaji, Bavesh; Clausi, David A**.
		Vertebral Detection and Labelling Using Deep Learning for Spine MRI Registration by **Chu, Jonathan**.
		Integrating Inertial Data to a Hybrid Direct-Indirect Visual SLAM System by **Hu, Yan Song**.
12:00 – 13:10	Lunch Break	
13:10 – 14:10	Academic Keynote	*Visual Human Motion Analysis* by **Li Cheng**, M. Eng., PhD, Professor at the University of Alberta.
14:10 – 15:10	Academic Keynote	**Farzad Khalvati**, MASc, PhD, Associate Professor at the University of Toronto, Scientist and Endowed Chair in Medical Imaging and Artificial Intelligence at The Hospital for Sick Children.
15:10 – 16:30	3-Minute-Thesis-Style Rapid Talks!	

Day 2 — Wednesday, December 6, in DC-1301 & DC-1302 (online / in-person hybrid).

Time	Event	Title / Author(s)
09:30 – 09:45	Registration & Coffee	
09:45 – 10:00	Opening Remarks & Welcome	
10:00 – 11:00	Oral Presentations	*A Unified Model Selection Technique for Spectral Clustering Based Motion Segmentation* by **Huang, Yuxiang; Zelek, John; Chen, Yuhao**.
		Fast, Accurate and Object Boundary-Aware Surface Normal Estimation from Depth Maps by **Moradi, Saed; Sepanj, Hadi; Memarmoghadam, Alireza; Laurendeau, Denis; Fieguth, Paul**.
		DARLEI: Deep Accelerated Reinforcement Learning for Embodied Intelligence by **Nair, Saeejith; Shafiee, Mohammad Javad; Wong, Alexander**.
11:00 – 12:00	Poster Session & Industrial Showcase	
12:00 – 13:00	Lunch	
13:00 – 14:00	Academic Keynote	*Decoding the Living Library: AI's Role in Cataloging Biodiversity* by **Graham Taylor**, PhD, Professor at the University of Guelph, Canada CIFAR AI Chair and Research Director at the Vector Institute for Artificial Intelligence, Academic Director at NextAI.
14:00 – 14:30	Awards Ceremony & Closing Remarks	

Day 2 — Poster Sessions, in DC-1301 (in-person only), 10:00 − 12:00.

1. *Generating Synthetic Geolocation Data using Conditional Tabular Generative Adversarial Networks: Issues and Challenges* by **Abdullah, Abu Yousuf Md; Hu, Bing; Basri, Mohammad Ahmed; Tsao, Shu-Feng; Butt, Zahid; Chen, Helen**.

2. *Towards Expert-level Feedback for Physiotherapy Exercises with Progress Reports* by **Ashrafzadeh, Hossein; Shabani, Amir**.

3. *Towards Agile Human Pose Estimation: A Benchmark Study in Ice Hockey Analytics* by **Balaji, Bavesh; Clausi, David A**.

4. *A Hyperparameter Framework for Synthetic Data Generation Methods* by **Basri, Mohammad Ahmed; Hu, Bing; Abdullah, Abu Yousuf Md; Tsao, Shu-Feng; Butt, Zahid; Chen, Helen**.

5. *Towards Viewpoint-Invariant Robust 3D Registration: A Contrastive Attention Guided Point Cloud Registration* by **Bright, Jerrin; Zelek, John**.

6. *Vertebral Detection and Labelling Using Deep Learning for Spine MRI Registration* by **Chu, Jonathan**.

7. *Explainable Age Predictions from Electroencephalography Data* by **Cook, Zara; Sinha, Grant; Zhao, Chengzong; Wang, Ze Feng; Doesburg, Sam; Medvedev, George; Ribary, Urs; Vakorin, Vasily; Belacel, Nabil; XI, PENGCHENG**.

8. *μArr-Synth – a synthetic dataset generator for DNA-microarray-image-denoising AI models* by **Czarnecki, Krzysztof J; Chen, Yuhao; Wong, Alexander**.

9. *NutritionVerse-3D-2.0: A High-resolution 3D Food Dataset for Nutrition Estimation* by **Czarnecki, Krzysztof J; Vinod, Gautham; Mahmud, Talha Ibn; Tai, Chi-en A; Chen, Yuhao; He, Jiangpeng; Zhu, Fengqing Maggie; Delp, Edward J.; Wong, Alexander**.

10. *Incorporating Attention Mechanism and Word Embeddings for Generating Image Captions* by **D'Mello, Desiree; Bajwa, Garima**.

11. *An Investigation into Tracker Performance on Datasets with Photometric Changes* by **Feng, Chun Cheng**.

12. *Evaluation Methods for Synthetic Data in Pursuit of Open Data* by **Hu, Bing; Basri, Mohammad Ahmed; Abdullah, Abu Yousuf Md; Tsao, Shu-Feng; Butt, Zahid; Chen, Helen**.

13. *Integrating Inertial Data to a Hybrid Direct-Indirect Visual SLAM System* by **Hu, Yan Song**.

14. *A Unified Model Selection Technique for Spectral Clustering Based Motion Segmentation* by **Huang, Yuxiang; Zelek, John; Chen, Yuhao**.

15. *Generalizing For Classes Linked To Domains* by **Kaai, Kimathi; Hossain, Saad; Rambhatla, Sirisha**.

16. *E-OAT: Enhanced Object Annotation using point Tracking* by **Khanna, Dheeraj; Yang, Adam S; Zelek, John**.

17. *Paired Change Detection Through Neural Radiance Field* by **Liu, Yizhe; Zelek, John**.

18. *FoodFusion: A Latent Diffusion Model for Realistic Food Image Generation* by **Markham, Olivia; Chen, Yuhao; Tai, Chi-en A; Wong, Alexander**.

19. *Fast, Accurate and Object Boundary-Aware Surface Normal Estimation from Depth Maps* by **Moradi, Saed; Sepanj, Hadi; Memarmoghadam, Alireza; Laurendeau, Denis; Fieguth, Paul**.

20. *Enhancing Reinforcement Learning in Vision-Based Environments with Optical Flow* by **Mukherjee, Amartya; Liu, Jun**.

21. *DARLEI: Deep Accelerated Reinforcement Learning for Embodied Intelligence* by **Nair, Saeejith; Shafiee, Mohammad Javad; Wong, Alexander**.

22. *NutritionVerse-Synth: An Open Access Synthetically Generated 2D Food Scene Dataset for Dietary Intake Estimation* by **Nair, Saeejith; Tai, Chi-en A; Chen, Yuhao; Wong, Alexander**.

23. *DEPTH ESTIMATION TO ENHANCE MULTI-OBJECT TRACKING FOR ICE HOCKEY ANALYTICS* by **Nsiempba, Ken M**.

24. *Region-level Ground Truth can produce Pixel-level Segmentation for Sea Ice Concentration* by **Patel, Muhammed; Chen, Xinwei; Xu, Linlin; Chen, Yuhao; Scott, K Andrea; Clausi, David A**.

25. *The Effects of Label Errors in Training Data on Model Performance and Overfitting* by **Pellegrino, Nicholas; Zhao, Nolen; Fieguth, Paul**.

26. *VIP-HTD : A Public Benchmark for Multi-Player Tracking in Ice Hockey* by **Prakash, Harish**.

27. *Out-of-Focus Camera Calibration* by **Schmalenberg, Ryan; Zelek, John**.

28. *Context-Aware Augmentation for Contrastive Self-Supervised Representation Learning* by **Sepanj, Hadi; Fieguth, Paul**.

29. *Towards Precision in Ocular Surface Temperature Measurement: Improvements in the ThermOcular System's Image Segmentation* by **Shahsavari, Navid; Murphy, Paul; Wong, Alexander; Zare Bidaki, Ehsan**.

30. *Instance Segmentation to estimate the volume of food on utensils in single-view videos* by **Sharma, Aaryam; Chen, Yuhao; Czarnecki, Krzysztof J; Wong, Alexander**.

31. *Cancer-Net PCa-Gen: Synthesis of Realistic Prostate Diffusion Weighted Imaging Data via Anatomic-Conditional Controlled Latent Diffusion* by **Sridhar, Aditya; Tai, Chi-en A; Gunraj, Hayden; Chen, Yuhao; Wong, Alexander**.

32. *NutritionVerse-Real: An Open Access Manually Collected 2D Food Scene Dataset for Dietary Intake Estimation* by **Tai, Chi-en A; Nair, Saeejith; Markham, Olivia; Keller, Matthew E; Wu, Yifan; Chen, Yuhao; Wong, Alexander**.

33. *Unsupervised Methods for Fly Sperm Motility Analysis* by **Thomson, John W; Park, Jinman; Magdanz, Veronika; Clausi, David A**.

34. *COVIDx CXR-4: An Expanded Multi-Institutional Open-Source Benchmark Dataset for Chest X-ray Image-Based Computer-Aided COVID-19 Diagnostics* by **Wu, Yifan; Gunraj, Hayden; Tai, Chi-en A; Wong, Alexander**.

35. *Beyond the Scoreboard: Advancing Fairness in Athlete Selection with Simulation-Based Tournament Strategies* by **Zeng, E. Zhixuan; Zeng, Yuhong**.

36. *Vision Transformers for Age Prediction from Gait Energy Image Data* by **Zhao, Chengzong; Wang, Ze Feng; Cook, Zara; Sinha, Grant; Li, Simon; Shu, Chang; XI, PENGCHENG**.