

SCHEDULE

of the

10TH ANNUAL CONFERENCE
ON COMPUTER VISION
AND INTELLIGENT SYSTEMS

on

DECEMBER 2ND AND 3RD, 2024

DAY 1 — MONDAY, DECEMBER 2, IN DC-1301 & DC-1302 (ONLINE / IN-PERSON HYBRID).

TO JOIN ONLINE VIA MICROSOFT TEAMS

<https://www.microsoft.com/en-ca/microsoft-teams/join-a-meeting>

Meeting ID: 229 141 972 504. Passcode: Z48CZ2xt.

TIME	EVENT	TITLE / AUTHOR(S)
08:30 – 08:50	Registration & Coffee	
08:50 – 09:00	Opening Remarks	Chang Liu , CVIS 2024 Chair, MASc.
09:00 – 10:00	Oral Presentations	<p><i>Optimizing 3D Gaussian Splatting via Point Cloud Upsampling</i> by Ramlal, Adrian*; Hu, Yan Song; Zepek, John.</p> <p><i>Loss Functions Robust to the Presence of Label Errors</i> by Pellegrino, Nicholas*; Szczecina, David; Fieguth, Paul.</p> <p><i>Elevating Construction Monitoring: A Comprehensive UAV-Based Data Collection System for Outdoor Construction Dynamics</i> by Mao, Dayou*; Lin, Yuchen; Gupta, Mihir; Hu, Yan Song; Lou, Maxwell; Jalaei, Farzad; RazaviAlavi, SeyedReza; Ebadi, Ashkan; Wong, Alexander; Chen, Yuhao</p>
10:00 – 11:00	Industry Keynote	<i>Sorin Cheran</i> , Chief Information and Analytics Officer, Williams Racing at Formula 1.
11:00 – 12:00	Oral Presentations	<p><i>LangDA: Language-guided Domain Adaptive Semantic Segmentation</i> by Liu, Chang*; Hossain, Saad; Rambhatla, Sirisha; Wong, Alexander.</p> <p><i>Generative Video Editing: From unconfident to confident</i> by Buzko, Kseniia*; Chen, Yuhao.</p> <p><i>Hyperbolic Neural Networks are Parameter-Efficient Robustly-Trainable Hierarchical Data Classifiers</i> by Pellegrino, Nicholas*; Fieguth, Paul.</p>
12:00 – 13:00	Lunch	
12:30 – 12:45	Industry Lightning Talk	<i>Consolidate on-call and incident response under one roof using LLM.</i> Weihan Li . Rootly.
13:00 – 14:00	Academic Keynote	<i>3D Computer Vision and its Evolution from Depth Sensors to Novel View Synthesis.</i> Prof. Andrea Tagliasacchi , Associate Professor, Simon Fraser University, Staff Research Scientist at Google DeepMind
14:00 – 14:15	Industry Lightning Talk	<i>TritonVerify</i> .
14:15 – 14:30	Industry Lightning Talk	<i>Sixty Degree Capital</i> .
14:30 – 16:30	Poster Session & Industrial Showcase	

*Indicates the first author of the paper.

DAY 2 — TUESDAY, DECEMBER 3, IN DC-1301 & DC-1302 (ONLINE / IN-PERSON HYBRID).

TO JOIN ONLINE VIA MICROSOFT TEAMS

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Meeting ID: 229 141 972 504. Passcode: Z48CZ2xt.

TIME	EVENT	TITLE / AUTHOR(S)
09:30 – 09:45	Registration & Coffee	
09:45 – 10:00	Opening Remarks & Welcome	Chang Liu , CVIS 2024 Chair, MASC.
10:00 – 11:00	Oral Presentations	<p><i>Cancer-Net PCa-Seg: Benchmarking Deep Learning Models for Prostate Cancer Segmentation Using Synthetic Correlated Diffusion Imaging</i> by Dewbury, Jarett; Tai, Chi-en*; Wong, Alexander.</p> <p><i>Decoding Diffusion: A Scalable Framework for Unsupervised Analysis of Latent Space Biases and Representations Using Natural Language Prompts</i> by Zeng, E. Zhixuan*; Chen, Yuhao; Wong, Alexander.</p> <p><i>Comparative Analysis of Multi-Channel Feature Extraction Using a Modified K-means and PCA for PARS-to-H&E Image Translation</i> by Boktor, Marian*; Fieguth, Paul.</p>
11:00 – 12:00	Academic Keynote	<i>Winter Is Coming: Extending Self-Driving Perception to Adverse Weather</i> , Prof. Steve Waslander , Professor, University of Toronto. Director, Toronto Robotics and AI Laboratory
12:00 – 13:00	Lunch	
13:00 – 14:00	Academic Keynote	<i>Digital Pathology Meets Spatial Omics: Emerging Problems in Data Integration, Solutions, and New Opportunities</i> . Prof. Pinaki Sarder , Associate Professor, University of Florida
14:00 – 15:00	Oral Presentations	<p><i>Cancer-Net SCA-Synth: An Open Access Synthetically Generated 2D Skin Lesion Dataset for Skin Cancer Classification</i> by Tai, Chi-en*; Ding, Oustan; Wong, Alexander.</p> <p><i>NFLNet: A hard hitting evaluation of deep learning approaches to tackle prediction</i> by McGuigan, Kiernan*; de Loë, Lily.</p> <p><i>Perceiver Model Ensemble for Solar Power Forecasting: A Winning Solution for ClimateHack.AI 2023-2024</i> by Yu, Trevor*; Demars, Carter; Khan, Areel.</p>
15:00 – 15:30	Awards Ceremony & Closing Remarks	

*Indicates the first author of the paper.

DAY 1 — POSTER SESSIONS, IN DC-1301 (IN-PERSON ONLY), 14:30 – 16:30.

1. *Enhancing Parkinson's Disease Diagnosis through Synthetic Image Augmentation and Deep Learning Model Evaluation* by **Rumman, Mosarrat***; **Davoudi, Heidar**; **Ebrahimi, Mehran**.
2. *Parametrized Dataset Generator for the Classification of Ice Hockey Power Plays* by **Nsiempba , Ken***; **Zelek, John**; **Clausi, David**.
3. *Enhancing AI-powered Tuberculosis Screening: Preliminary Insights into Adversarial Robustness* by **Lee, Yin Hau***; **Wong, Alexander** ; **Ebadi, Ashkan**.
4. *Cancer-Net PCa-Seg: Benchmarking Deep Learning Models for Prostate Cancer Segmentation Using Synthetic Correlated Diffusion Imaging* by **Dewbury, Jarett**; **Tai, Chi-en***; **Wong, Alexander**.
5. *Cancer-Net SCa-Synth: An Open Access Synthetically Generated 2D Skin Lesion Dataset for Skin Cancer Classification* by **Tai, Chi-en***; **Ding, Oustan**; **Wong, Alexander**.
6. *Aligning Feature Distributions in VICReg Using Maximum Mean Discrepancy for Enhanced Manifold Awareness in Self-Supervised Representation Learning* by **Sepanj, Hadi***; **Fieguth, Paul**.
7. *i-Grad-CAM: Transformation Invariant Grad-CAM* by **Khawaja, Murad ul Hassan***; **Roy, Emon**; **Davoudi, Heidar**; **Ebrahimi, Mehran**.
8. *Alice or Malice: A.I.'s Dance with Humanity* by **Sepanj, Hadi***; **Fieguth, Paul**.
9. *Challenges and Approaches to 3D Reconstruction of Food for Dietary Behaviours Monitoring* by **Lee, Yin Hau***; **Chen, Yuhao**.
10. *Decoding Diffusion: A Scalable Framework for Unsupervised Analysis of Latent Space Biases and Representations Using Natural Language Prompts* by **Zeng, E. Zhixuan***; **Chen, Yuhao**; **Wong, Alexander**.
11. *DIPLOMAT* by **Robinson, Isaac**; **Glidden, George** ; **Panchal, Neekesh***; **Insel, Nathan**; **Wheeler, Travis**.
12. *Loss Functions Robust to the Presence of Label Errors* by **Pellegrino, Nicholas***; **Szczecina, David**; **Fieguth, Paul**.
13. *Evaluating the Impact of Stereo Overlap on Calibration parameters in Camera and Projector Systems* by **Ayee Goundar Venkatesan, Pranav Kumar***; **Moradi, Saed**; **Fieguth, Paul**; **Lamm, Mark**.
14. *Elevating Construction Monitoring: A Comprehensive UAV-Based Data Collection System for Outdoor Construction Dynamics* by **Mao, Dayou***; **Lin, Yuchen**; **Gupta, Mihir**; **Hu, Yan Song**; **Lou, Maxwell**; **Jalaei, Farzad**; **RazaviAlavi, SeyedReza**; **Ebadi, Ashkan**; **Wong, Alexander** ; **Chen, Yuhao**.
15. *Dataset for Real-World Human Action Detection Using FMCW mmWave Radar* by **Siva, Parthipan***; **Jayabahu, Dylan**.
16. *AI-Powered Pill Recognition: A Step Towards Smarter Medication Management* by **Azimi, Hilda***; **Mowaswes, Walid**; **Chen, Yuhao**; **Ebadi, Ashkan**.

17. *A success metric for individual player encounters in Ice Hockey videos* by **Nsiempba , Ken***; **Chen, Yuhao**; **Clausi, David**; **Zelek, John**; **Jiang, William**.
18. *Hyperbolic Neural Networks are Parameter-Efficient Robustly-Trainable Hierarchical Data Classifiers* by **Pellegrino, Nicholas***; **Fieguth, Paul**.
19. *Optimizing 3D Gaussian Splatting via Point Cloud Upsampling* by **Ramlal, Adrian***; **Hu, Yan Song**; **Zelek, John**.
20. *Comparative Analysis of Multi-Channel Feature Extraction Using a Modified K-means and PCA for PARS-to-H&E Image Translation* by **Boktor, Marian***; **Fieguth, Paul**.
21. *FoodTrack: Estimating Handheld Food Portions with Egocentric Video* by **Wang, Ervin***; **Chen, Yuhao**.
22. *LangDA: Language-guided Domain Adaptive Semantic Segmentation* by **Liu, Chang***; **Hossain, Saad**; **Rambhatla, Sirisha**; **Wong, Alexander**.
23. *Generative Video Editing: From unconfident to confident* by **Buzko, Kseniia***.
24. *Improving Speech Emotion Recognition: A Semi-Supervised Approach for Fine-Grained Analysis* by **Goyal, Kshitij***; **Sharda, Ishwak**; **Shabani, Amir**.
25. *6D Pose Estimation on Spoons and Hands* by **Chen, Yuhao***; **Yang, Fan**; **Tan, Kevin**.
26. *Leveraging Player Tracking for Event Detection in Ice Hockey* by **Nsiempba , Ken***; **Nazemi, Amir**; **Clausi, David**; **Zelek, John**.
27. *NFLNet: A hard hitting evaluation of deep learning approaches to tackle prediction* by **McGuigan, Kiernan***; **de Loë, Lily**.
28. *MKNO: Multi-Kernel Neural Operator* by **McGuigan, Kiernan***.
29. *Using Mixture of Experts to Fine-Tune Robotic Video Transformers* by **Ali, Muhammad***; **Wong, Alexander**; **Altaf, Zain**; **Trandinh, Winnie**.
30. *NutritionVerse: An AI-Driven Dietary Monitoring Tool for Aging Populations* by **Stoica, Valerie***; **Chen, Yuhao**.
31. *A Text-Centric Approach to ASCII Art using Graph Neural Networks* by **thasin, Maisha***.
32. *FoodVideoQA: A Novel Framework for Dietary Monitoring* by **Shah, Krish***; **Viswanath, Siddharth**; **Chen, Yuhao**; **XI, PENGCHENG**.
33. *Passive Video liveness detection using Vision Transformer* by **Ayee Goundar Venkatesan, Pranav Kumar***; **Krishnamoorthy Murali, Harish**.
34. *Stereo-Visual Odometry using Deep Learning* by **Ayee Goundar Venkatesan, Pranav Kumar***; **Krishnamoorthy Murali, Harish**.
35. *SynPrivacy: An Open Framework and Fair Metric for Evaluating Synthetic Data Privacy Risks* by **Hu,**

Bing*.

36. *Perceiver Model Ensemble for Solar Power Forecasting: A Winning Solution for ClimateHack.AI 2023-2024* by **Yu, Trevor***; **Demars, Carter**; **Khan, Areel**.

37. *Image Generation at Different Detail Level: Scaling Skip Connections in ViT-based Diffusion Models* by **Liu, Chang***; **Habashy, Karim**; **Pan, Yuchen**; **Rambhatla, Sirisha**; **Wong, Alexander**.

38. *Transformer-Based CT Auto-Segmentation of Lung Metastases – A Tumor-Board Application* by **Ramezani, Hooman***.