

# DAY 1 – Tuesday, December 6<sup>th</sup>

E7 Hub and Lecture Hall/ ZOOM

<b>Morning</b>	<b>Meeting ID: 995 5910 6928. Passcode: 991326</b>
<b>8:40 am - 9:00 am</b>	<i>Opening Remarks:</i> <i>Alexander Wong</i> (Hybrid: E7 Hub & Lecture Hall)
<b>9:00 am - 10:00 am</b>	<i>Academia Keynote1:</i> Dr. Matthew Lungren, Chief Medical Information Officer, Nuance Communications (Online)
<b>10:00 am - 11:00 am</b>	<i>Academia Keynote2:</i> Dr. Zhou Zhang, Assistant Professor, University of Wisconsin-Madison (Online)
<b>11:10 am - 12:10 pm</b>	<i>Oral Presentations 1</i> (Hybrid: E7 Hub & Lecture Hall)
<b>12:10 pm - 1:00 pm</b>	<i>Lunch Break</i>
<b>Afternoon</b>	<b>Meeting ID: 945 9208 6999. Passcode: 576692</b>
<b>1:00 pm - 2:00 pm</b>	<i>Academia Keynote3:</i> Dr. Shijia Pan, Assistant Professor, University of California Merced (Online)
<b>2:10 pm - 3:10 pm</b>	<i>Oral Presentations 2</i> (Hybrid: E7 Hub & Lecture Hall)
<b>3:20 pm – 4:20 pm</b>	<i>Oral Presentations 3</i> (Hybrid: E7 Hub & Lecture Hall)

# **Please use the zoom links below to join virtually.**

## **Zoom link before Lunch:**

Topic: CVIS 2022 -- Morning Dec6

Time: Dec 6, 2022 08:30 AM Eastern Time (US and Canada)

Join Zoom Meeting

<https://uwaterloo.zoom.us/j/99559106928?pwd=WGZTbzQ3RnlQMnlGYnh5ZG5FM3NqZz09>

Meeting ID: 995 5910 6928.      Passcode: 991326

## **Zoom link after Lunch:**

Topic: CVIS 2022 -- Afternoon Dec6

Time: Dec 6, 2022 12:30 PM Eastern Time (US and Canada)

Join Zoom Meeting

<https://uwaterloo.zoom.us/j/94592086999?pwd=RzNmOE1oMzlZcDNQWktzQWpnQ0dXZz09>

Meeting ID: 945 9208 6999.      Passcode: 576692

## **Oral Presentations 1 --11:10 am - 12:10 pm**

Plankton-FL: Exploration of Federated Learning for Privacy-Preserving Training of Deep Neural Networks for Phytoplankton Classification

**Zhang, Daniel\***; Voleti, Vikram; Deglint, Jason L; Wong, Alexander

Hierarchical sea ice classification with dual-polarized SAR imagery

**Chen, Xinwei\***; Scott, K Andrea; Jiang, Mingzhe; Xu, Linlin; Clausi, David A

Sea Ice Mapping from Compact Polarimetric SAR Imagery Using Contextual Information and Learned Features

**Taleghanidoozdozan, Saeid\***; Xu, Linlin; Clausi, David A

PCBDet: An Efficient Deep Neural Network Object Detection Architecture for Automatic PCB Component Detection on the Edge

**Li, Brian\***; Palayew, Steven; Li, Francis; Abbasi, Saad; Nair, Saejith; Wong, Alexander

## **Oral Presentations 2 -- 2:10 pm - 3:10 pm**

COVID-Net UV: An End-to-End Spatio-Temporal Deep Neural Network Architecture for Automated Diagnosis of COVID-19 Infection from Ultrasound Videos

**Azimi, Hilda\***; Ebadi, Ashkan; Song, Jessy; XI, PENGCHENG; Tremblay, Stéphane; Wong, Alexander

COVID-Net Assistant: A Deep Learning-Driven Virtual Assistant for Early COVID-19 Recommendation

**Shi, Pengyuan\***; Wang, Yuetong; Abbasi, Saad ; Wong, Alexander

Compassionate AI in Clinical Care: Feasibility Assessment of a Rules-Based Algorithm to Support a Nurse-Led Model of Care for Prostate Cancer Survivorship

**Janes, Elizabeth L\***; Pfisterer, Kaylen; Pham, Quynh

A Novel Computational Thermal-Visual Imaging System for Automatic Cornea Temperature Measurement and Tracking

**Zare Bidaki, Ehsan\***

## **Oral Presentations 3 -- 3:20 pm – 4:20 pm**

NRC-GAMMA: A Large Novel Open-Access Gas Meter Image Dataset

**Ebadi, Ashkan\***; Paul, Patrick; Auer, Sofia; Tremblay, Stéphane

Causal Discovery from Sparse Time-Series Data Using Echo State Network

**Chen, Haonan\***; Chang, Bo Yuan ; Naiel, Mohamed; Zelek, John

From Intention to Action: The Fair AI Toolbox

**Meyer, Robbie\***; Wong, Alexander

Foodverse: A Dataset of 3D Food Models for Nutritional Intake Estimation

**Tai, Chi-en A\***; Chen, Yuhao; Keller, Matthew; Kerrigan, Mattie; Nair, Saejith; XI, PENGCHENG; Wong, Alexander

## **DAY 2 – Wednesday, December 7<sup>th</sup>**

<b>9:30 am - 10:00 am</b>	<i>Registration &amp; Coffee</i> (DC 1301)
<b>10:00 am -10:15 am</b>	<i>Opening Remarks and Welcome</i> (DC 1301)
<b>10:20 am - 11:30 pm</b>	<i>Poster Session &amp; Coffee</i> (DC 1301)
<b>11:30 pm - 12:50 pm</b>	<i>Lunch</i> (DC 1301)
<b>1:00 pm - 2:00 pm</b>	<i>Industrial Keynote:</i> Gavriel State, NVIDIA (DC 1302)
<b>2:00 pm - 2:20 pm</b>	<i>Industrial presentation</i> ABR (DC 1302)
<b>2:20 pm – 3:30 pm</b>	<i>Industrial Showcase</i> (DC 1301)
<b>3:40 pm - 4:25 pm</b>	<i>Awards Ceremony &amp; Closing Remarks</i> (DC 1302)

# **DAY 2 – Poster Session** 10:30 am - 11:30 pm, DC1301

1. In-Home Activity Monitoring Using Radars  
*Abedi, Hajar\**; *Ansariyan, Ahmad*; *Morita, Plinio*; *Wong, Alexander*; *Boger, Jennifer*; *Shaker, George*
2. A Machine Learning Approach to Spatiotemporal Emission Modelling  
*Zheng, Kelly L\**; *Fraser, Roydon*; *Thé, Jesse*
3. HybridCom: A Clone-Aware Hybrid Neural Translation and Information Retrieval Framework for Source Code Summarization  
*Liu, Xiaotian\**
4. Bayesian Subpixel Mapping Neural Network for Hyperspectral images  
*Fang, Yuan\**; *Xu, Linlin*; *Wang, Yuxian*; *Clausi, David A*
5. Machine Learning Challenges of Biological Factors in Insect Image Data  
*Pellegrino, Nicholas\**; *Gharaee, Zahra*; *Fieguth, Paul*
6. Challenges in detection of rare close-call events from vehicle-traffic videos  
*Koh, Auguste L. W.\**; *Park, Jinman*; *Fieguth, Paul*
7. Improved Hockey Rink Localization via Augmentation and Temporal Frame Analysis  
*Shang, Jia Cheng\**; *Fani, Mehrnaz*; *Clausi, David A*; *Shafiee, Mohammad Javad*
8. Investigation of Unsupervised Auto-segmentation for Weak Phytoplankton Annotations  
*Deglint, Jason L\**
9. A Trustworthy Framework for Medical Image Analysis with Deep Learning  
*Ma, Kai\**; *He, Siyuan*; *XI, PENGCHENG*; *Ebadi, Ashkan*; *Tremblay, Stéphane*; *Wong, Alexander*
10. Vision Systems For Identifying Interlocutor Behaviour And Augmenting Human-Robot Interaction  
*Barot, Pranav\**; *MacDonald, Ewen*; *Mombaur, Katja*
11. Automated search for optimal convolutional neural network factorization  
*Mokadem, Frank\**; *Wong, Alexander*
12. Evaluating The Affine Grassmanian for First-Pass Histogram Place Recognition  
*Bradley, Matthew\**; *Zelek, John*
13. Investigating Use of Keypoints for Object Pose Recognition  
*Zeng, E. Zhixuan\**; *Chen, Yuhao*; *Wong, Alexander*
14. Development of a Vertebral Field-of-View Detector for Spine MRI Registration  
*Chu, Jonathan\**
15. Beluga whale detection from sliced aerial remote sensing images using object detection pipelines  
*Patel, Muhammed*; *Chen, Xinwei\**; *Brubacher, Neil*; *Xu, Linlin*; *Clausi, David A*
16. Continuous Optimization for Medical Image Registration of Large Displacement Datasets  
*Vujovic, Teodora\**
17. Foodverse: A Dataset of 3D Food Models for Nutritional Intake Estimation  
*Tai, Chi-en A\**; *Chen, Yuhao*; *Keller, Matthew*; *Kerrigan, Mattie*; *Nair, Saejith*; *XI, PENGCHENG*; *Wong, Alexander*

# DAY 2

## INDUSTRIAL KEYNOTE

1:00 pm – 2:00 pm  
DC 1302

**Speaker:**

Gavriel State,  
Senior Director of Simulation  
and AI, NVIDIA

**Title:**

Synthetic Data for Computer  
Vision and Agile Robotic  
Manipulation

## INDUSTRIAL PRESENTATION

2:15 pm – 2:30 pm  
DC 1302

Applied Brain Research (ABR)

## INDUSTRIAL INNOVATION SHOWCASE

2:30 pm – 3:30 pm  
DC 1301

ABR

Waterloo AI

Avidbots

Chirp

Miovision

SPORTLOGiQ