# **ARIA 2023 I EXHIBITOR LIST**

# **Industrial Exhibitors**

Booth #1 Booth #2 & #3 Booth #4
Walmart Global Tech SOTI AMD

Booth #8

# **Departmental Exhibitors**

Booth #5

Master of Mathematical Finance, U of T Dept. of Computer Science, U of T

Booth #6 Booth #9

Masters of Financial Insurance, U of T Master of Science in Applied Computing, U of T

Booth #7

Dept. of Statistical Sciences, U of T

# **Demonstrations**

# **Demo #1** | Mustafa Haiderbhai, Radian Gondokaryono, Lueder A. Kahrs

Multi-platform Autonomous Surgical Robotics From Simulation Using Reinforcement Learning

Our project aims to perform autonomous surgical tasks using Reinforcement Learning

## **Demo #2** | Andrii Lenyshyn

## "WaM" Cognitive Assessment in VR

I'm working on a project that focuses on using gamification techniques for cognitive assessments in Virtual Reality

## **Demo #3** | Fenil Patel, Chrisee Zhu, Elliot Chen

#### **Triple Point**

Award-winning game at Ontario's Level Up Student Showcase 2023

#### **Demo #4** | Shivanshi Gupta

## The Moon Man

A captivating first-person exploration puzzle game set in a mesmerizing Virtual Reality landscape

#### **Demo #5** | Soso (Zhifei) Song

#### 3D Perspectives in Gaming: Exploring its Mechanics and Level Design Applications

Illucid originated from a game design course and introduces a unique first-person puzzle mechanism

## **Demo #6** | Brenna Li, Anna Kirk, Jiaqi Guo, Liam Baker, Khai Truong, Alex Mariakakis

## **Pre-consultation Medical Chatbot**

Chatbots supported by Large Language Models are effective at helping doctors gather information

#### **Demo #7** | Pritish Mishra, Brian Ramprasad

## Hierarchical Data Management for Edge-Cloud Infrastructure

Data processing layer and a file-storage system built on top of a hierarchical computing infrastructure

#### **Demo #8** | Sophie Liu

## DynaCOMP: Bringing ML to the Transplantation Clinic

Created a machine learning model which stratifies patients into different risk categories

## **Demo #9** | Jasper (Jan-Philip) Gergik

#### Playing Various Strategies in Dominion Using Deep Reinforcement Learning

Reinforcement learning based agent with a novel multiset-based architecture

# Demo #10 | Bingjian Huang, Mason Cai, Conner Ren, Jerry Cheng, Abel Sang

#### NebulaSuit: An Upper-Body High-Density Vibrotactile Suit Built With Scalable Hardware Solutions

VibroStar, a high-resolution vibrotactile suit that covers the upper body surface with dense arrays of actuators

#### **Demo #11** Aida Ramezani

#### Moral Norm Variation in Large Language Models

Computational tools to analyze language change in both temporal and cultural levels



# Dept. of Computer Science, Research Stream

# **Dynamic Graphics Project Lab of the University of Toronto**

# Presentation #15 | Chuyi (Sky) Hou

#### Headshift

Enhancing VR immersion by addressing headset slippage ensures consistent visuals, reduces discomfort, and elevates the overall user experience.

# IATSL: Intelligent Assistive Technology and Systems Lab

# Presentation #16 | Soroush Mehraban, Vida Adeli, Babak Taati

# MotionAGFormer: Enhancing 3D Human Pose Estimation with a Transformer-GCNFormer Network

A model with less parameters and computation compared to SOTA models while being more accurate in 3D Human pose estimation.

#### **Presentation #17** | Vida Adeli

#### Vision-Based Analysis of Gait in Older Adults with Dementia

Unlocking new insights into gait patterns in dementia with computer vision, paving the way for personalized fall prevention and tailored interventions.

# U of T Systems and Networks Group (SysNet)

#### **Presentation #18** | Christina Christodoulakis

## Pytheas: Pattern-Based Table Discovery in CSV Files

We present Pytheas, our supervised learning approach for accurately discovering tables in Open CSV files, with a confidence metric for efficiently labeling data.

## **Presentation #19** | Alexey Khrabrov

## JITServer: Disaggregated JIT Compiler for the JVM

Improving JVM performance and reducing CPU and memory costs in the cloud using remote JIT compilation and caching compiled code and profiling data.



# Master of Science in Applied Computing (MScAC)

## 16 Bit Inc.

# **Presentation #20 | Yuxuan Wang**

#### **Broca**

Leveraging multimodal prompt tuning and large language model for Automated Radiology Reporting from X-ray Imagery.

#### **Presentation #21** | Abdur Rahman, Sarthak Narayan

#### Revolutionizing Healthcare Application Deployment: A Kubernetes-Driven Approach

A seamless and reliable deployment and management solution for healthcare applications on-premise and cloud using Kubernetes.

## Adobe

#### Presentation #22 | Lukas Jurisica

#### Vision-Based Analysis of Gait in Older Adults with Dementia

By utilizing an alternative coordinate system based on Integer Barycentric Coordinates for representing meshes, we are able to robustly and efficiently apply certain geometry processing algorithms.

# **Agentnoon**

#### Presentation #23 | Sarah Rozaidi

#### **Multi-Regional Salary Prediction Model**

Empowering strategic decisions with comprehensive insights into compensation trends worldwide

#### **AMD**

# Presentation #24 | Sanjukta De

#### Learning GPU Code Structure using Large Language Models

Revolutionizing GPU Kernel Optimization: Harnessing Transformer-Based Models to Improve Performance and Efficiency

# **Presentation #25** | Vignesh Edithal

## Automatic Gameplay Highlight Reel Generation using Multimodal Learning

Detect and merge interesting events in first person shooting games using multimodal video transformer model to generate highlight clips

# Presentation #26 | Geoffrey Harrison

## Task Grouping for Multi-Task Reinforcement Learning

Measuring relationships between tasks enables disentangling knowledge transfer in multi-task RL.

# Presentation #27 | Yi Cheng (Ethan) Zhu

## **3D Image Representation for Gameplay Automation**

Self-Supervised image representation encoding methods do not generalize to novel exploration and other Reinforcement Learning tasks.

#### Presentation #28 | Zichuan Guan

## Machine Learning for Pattern-Matching Optimization in GPU Compilers

Advancing GPU performance through Al-Driven compiler optimizations

#### **Presentation #29** | Mahesh Jayasankar

#### Real-time Camera Tracking for Gameplay Automation in Video Games

A navigational assistance module for video games that works in real-time using only a single camera's footage

#### Presentation #30 | Akash Haridas

#### High-Fidelity Human Avatars from Laptop Webcams Using Edge Compute

Personalized photorealistic avatars for video calls and virtual reality, generated automatically using your webcam and running locally.

#### **Presentation #31** | Donghui (Alex) Xu

#### **Content-Aware Video Encoder Optimization**

Elevating Conventional Video Encoder with Deep Learning Models for Enhanced Video Quality and Bitrate Efficiency

#### Presentation #32 | Adeem Amvn Jassani

#### Al-Based Saliency Prediction For Better Perceptual Quality in Display and Video Compression

Ultimate visual experience, from natural scenes to gaming contents and beyond, with our real-time saliency prediction-based quality improvement

# **Presentation #33** | Amandeep Singh

#### Automatically Parallelizing C/C++ Code with Large Language Models

Using Large Language Model to automatically classify and specify OpenMP directives for the Sequential C/C++ code.

# Apollo.io

## **Presentation #34** | Anurag Bajpai

#### **Prospect Recommendations with Integrated LLM Features**

Leveraging LLM-generated Ideal Customer Profiles and Text Embeddings to Recommend Prospects to Sales Teams

#### **Arctic Wolf Networks**

# Presentation #35 | Ciiie Xia

# **Query Broker: An Efficient Cybersecurity Data Access Platform**

Enabling Efficient, Secure Data Retrieval for Enhanced Security and Al Services

## BenchSci

#### Presentation #36 | Tirth Patel

## Efficiently Training Large Language Models with Advanced Distributed Training Techniques

Unlocking Peak Efficiency: Scaling Large Language Model Training with DeepSpeed's ZeRO Optimization Strategies and Vertex Al's Distributed Training.

# **Bluecat Networks**

# Presentation #37 | Rajesh Marudhachalam, Ruixuan Zhang

#### **Detecting Malicious DNS Traffic Using Neural Networks**

Enhancing Network Security Using Weakly-Supervised Learning and Pairwise Relation Prediction Network

#### BlueDot Inc.

# Presentation #38 | Naveen Thangavelu

# A Global Surveillance System for Infectious Diseases and Bio-Security Threats

Revolutionizing Outbreak Analysis Using Large Language Models for Comprehensive Disease Event Extraction

#### **CPP Investments**

## Presentation #39 | Dixin Mou

#### **Enhancing Forecasting Performance of LightGBM through Feature Screening**

A systematic process to mitigate the impact of high feature dimensions while retaining informative features to produce forecasts with better out-of-sample ranking accuracy and volatility

# Presentation #40 | Jie (Alisa) Yang

#### **Exploring Graph Neural Network Methods on the Analyst Network Graph**

Both Node2Vec and Graph Convolutional Networks can be used to exploit the topology of the Analyst Network to explain companies returns

# Centre for Global Health Research (CGHR), Unity Health Toronto

#### Presentation #41 | Andv Lee

#### A Machine Learning Framework for Exploring Mortality in Developing Countries with Verbal Autopsies

Harmonizing verbal autopsy research into developing a conceptual framework which provides a roadmap to automating cause-of-death prediction using machine learning

# **Crossing Minds**

# Presentation #42 | Jason Tang

## Image Captions Are Worth a Thousand Words: Enhancing Search in Conversational Recommendations

Both Node2Vec and Graph Convolutional Networks can be used to exploit the topology of the Analyst Network to explain companies returns

# **Presentation #43** | Anusha Prabhudev

## DataStats: An Automated Framework Supporting the Design and Development of Recommender Systems

An innovative framework empowering recommender systems development with automated analysis, improved decision-making support, and domain-focused insights for enhanced personalization and efficiency.

# **Double Negative Ltd.**

## **Presentation #44** | Kartikaeya Kumar

#### **Automating Rotoscoping in Videos with NeRF Priors**

Are NeRFs the new greenscreen?

## Presentation #45 | Yihan (Nick) Ni

#### Latent DeepFakes: Fast High-Resolution Face Swap

Autoencoder based DeepFake face swap trained in Stable Diffusion latent space with reduced identity leakage using Vector Quantization layers.

## **Ecomtent**

#### **Presentation #46** | Zakaria Patel

#### **Enhancing Image Composition Control with Loss-Guided Diffusion Models**

Leveraging the synergy between loss guidance and attention injection to achieve precise layout and composition control.

## **Presentation #47** | Hantang Li

# Generative AI for Product Listing and Conditional Infographic Generation

Design reliable, scalable, and maintainable machine learning system for startup and exploration of conditional layout generation models for product infographic generation.

#### Geotab Inc.

# Presentation #48 | Xinyu Zhang

# **Data Quality Detection and Improvement for AI Dashcam Models**

Algorithms and Experiments

# Presentation #49 | Zhifan Wang

# From ML Model to Production: Streaming Data Analytics Infrastructure for IoT Big Data

A modern approach for deploying machine learning applications on cloud-based infrastructure integrating distributed computing and streaming capabilities for IoT Big Data use cases

# **Presentation #50** | Xinrong Zhou

#### Identifying Risk Factors for Hazardous Driving and Accident Propensity for Safer Fleets and Smart Cities

Smarter cities and safer roads start here: Unveiling the impact of collective vehicular conduct within an intersection on accident propensity

#### **Presentation #51** | Anh Tuan Tran

#### **Automatic Detection of Service Center Locations from Vehicle Data**

Clustering a large number of vehicle maintenance events and applying an anomaly detection model to detect service centers

# Google

# Presentation #71 | Yu-Chieh (Sunny) Wu

## Image Caption Generation with Machine Learning for AR Wearable Devices

Elevate AR wearable devices with Al-generated image captions: Optimizing user focus, experience, and productivity.

## **Presentation #72** | Jingtao Zhou

#### Visual Blocks for ML

A visual programming framework for prototyping machine learning-based application pipelines

#### Huawei

## **Presentation #52** | Tao Zhang

## LayoutDM: A Discrete Diffusion Approach for Optimal Smartphone Widget Layout Generation

Revolutionizing Smartphone UI Design with LayoutDM: A Discrete Diffusion Approach for Optimal Widget Layouts

## Presentation #53 | Samarendra Dash

#### **Leveraging LLMs for Operations Research Problems**

Can LLMs reason about mathematical modelling from natural language descriptions?

#### **Presentation #54** | Benjamin Correia

# OmniRuntime: Squeezing Every Last Drop of Performance for In-Memory Data Analytics

Hand optimizing an SQL analytics engine through low level analysis of operators and integrating hardware accelerators.

#### **Presentation #55** | Devu Liu. Duv Tran

#### IOMemTable — Memory-Optimized Index-Organized Table for LSM-tree Storage

Toward a better trade-off of index performance for Hybrid Transactional/Analytical Processing (HTAP) workloads

#### Intel

# Presentation #56 | Yuhang Liu

#### **Enhancement of IP Wizard in Power and Thermal Calculator**

Enrich the functionality of IP Wizard and improve the user experience

## **Iteration Matrix**

# Presentation #57 | Jiujiu (Jojo) Duan

# **Al-driven Web Payment Automation**

Efficiently Automating High-Volume, Time-Sensitive Payments with Google reCAPTCHA Overcoming Solutions.

# **J-Squared Technologies**

# Presentation #58 | Jaskaran Singh, Gurman Bhullar

#### Revitalizing Retail: Edge-Driven Computer Vision for Real-Time Analytics

Infusing AI Excellence into Retail: Harnessing State-of-the-Art Deep Learning for Instantaneous Insights, Robust Security and Advanced Customer Analytics.

# Kindred, Part of Ocado Group

# Presentation #59 | Jiachen (Charlie) Xu

# Efficient Embedding-Based Item Identification for Robotic Pick and Place Applications

Transforming Item Identification in Robot-Assisted Grocery Fulfillment: An Embedding-Driven Solution for Precision and Efficiency

# Presentation #60 | Junbo Huang

# Object Tracking for High-Speed Pick-and-Place Robot

Enabling Faster Robotic Operations with Real-Time, Detection-Based Item Tracking and Prediction Strategies

#### **MDA**

#### Presentation #61 | Val Kobilaski

## **CAPP: Conditional Variational Auto-Encoder Accelerated Path Planner**

A machine-learning approach to path-planning for a 7-DOF robotic manipulator

#### Metabob

#### Presentation #62 | Anthony Rinaldi

# Abstract Syntax Tree Coarsening via Deep Attention-Based Node Pooling Auto-Encoders

Attention-based graph coarsening allows for significant reduction of the size of graphs, while retaining sufficient information for graph reconstruction, as well as downstream classification tasks versus traditional algorithmic coarsening methods.

# **ModiFace**

## Presentation #63 | Keija Yin

## SCE-MAE: Selective Correspondence Enhancement with MAE for Self-Supervised Landmark Estimation

Learning dense discriminative representations from unlabelled data

# Presentation #64 | Xudong Liu

#### **Detailed Cross-Attention Control in Image Editing**

Refining Image Editing: Achieve Personalized, Pinpoint Adjustments While Preserving Identity and Quality.

#### **Presentation #65** | Yuging (Sophia) Zeng

#### Real-Time 3D Landmark Regression from Monocular Image Input on Mobile GPUs with Synthetic 3D Face Data

Describing human face shapes and positions from face images remains a popular topic at the intersection of computer vision and deep learning.

## Layer 6 Al

#### **Presentation #67** | Ilan Gofman

## **Enhancing Document Retrieval with Large Language Models and Human Feedback**

Using generative AI to make retrieval with human feedback more efficient

## Presentation #68 | Linfeng Du

# MultiResFormer: Transformer with Adaptive Multi-Resolution Analysis for Long-Term Time Series Forecasting

The first Transformer-based model with Fourier-guided time series segmentation which surpasses naive patch-based Transformer and CNN-based methods.

# **Presentation #69** | Apoorv Dankar

#### TabPFGen – Tabular Data Generation with TabPFN

TabPFGen creates an energy-based generative model for tabular data using the discriminative, in-context learning capabilities of pre-trained TabPFN transformer

#### Presentation #70 | Hamid Kamkari

# **Explaining the Out-of-Distribution Detection Paradox Through Likelihood Peaks**

TabPFGen creates an energy-based generative model for tabular data using the discriminative, in-context learning capabilities of pre-trained TabPFN transformer

## **National Research Council Canada**

## Presentation #74 | David Guzmán

# Speech Generation for Indigenous Language Education

Improving Speech Generation for Low Resource Languages via Spectrogram Denoising

#### Nureva

# Presentation #75 | Miaogi (Frank) Zhang

#### **Sound Event Localization and Detection**

Leveraging CRNNs in SELD: Elevating Precision in Sound Source Localization by using linear arrays of microphones.

#### **Presentation #76** | Wenzhe Xu

# Towards Broadcast-Quality Audio: Enhancement of Conference Microphones and Exploration of Objective Evaluation Techniques

Merging Deep Learning and Established Metrics for Accurate Audio Quality Assessment

# **Ocado Advanced Technology**

# **Presentation #77** | Sumant Bagri

#### Hardware Accelerated Collision Checking

Improve collision detection latency for robotic manipulators by leveraging SIMD hardware

## Pearson Canada Inc.

## **Presentation #78** | Hongbo (Eleanor) Zhou

## **Anomaly Detection for Automated English Language Test Scoring Improvement**

Enhancing automated English language test scoring precision with multi-speaker audio data and anomaly detection.

#### **Pelmorex**

#### **Presentation #79** | Charie Brady

## A Machine Learning Approach to Retail Sales Forecasting Using Localized Weather Features

Weather-driven consumer demand: building explainable machine learning models that adapt to changing local weather conditions for precise sales forecasting

## **Princess Margaret Cancer Center**

## Presentation #80 | Jean Yaacoub

#### **GNNs** with Protein Dynamics for Enhanced Drug Targeting

Analysis of binding affinity prediction models using Graph Neural Networks with modified protein features.

#### **QEYnet**

# Presentation #81 | Michael Luciuk

# Advancing the Security of Commercial Quantum-Key-Distribution Systems

A Proactive Approach to Vulnerability Assessment and Resolution

#### Roche

# Presentation #82 | Mingvi (Horus) Li

# DORA: DevOps Research and Assessment

Track code development efficiency and progress in one platform

# Samsung Al Center – Montreal

## Presentation #83 | Rui Heng Yang

## Accurate and Precise Force Estimation Algorithm for Robot Manipulation

Combining inverse finite element methods with neural networks to provide a robust and data-efficient algorithm for force estimation.

# **Samsung Al Center – Toronto**

# Presentation #84 | Tianshu (Chris) Kuai

## **Unsupervised Real Image Denoising**

Using a pre-trained off-the-shelf diffusion model as an image prior for unsupervised real-world image denoising.

## Presentation #85 | Ke Zhao

## **Towards Intelligent Edge Computing**

From Research Proof-of-Concept Server-based Pipeline to on-Device Deployment: A Case Study

## Presentation #86 | Vahid Zehtab

# **LUTFlow: Conditionally Bijective Implicit 3D Lookup Tables**

Embed infinite photo styles in your pictures; if a style doesn't suit, simply roll it back or craft your very own!

#### Sanofi

## Presentation #87 | Chaorui (Tom) Zhang

#### Closeness to Pathway: Clustering Patient Electronic Medical Records for Drug Repurposing

Evaluating and comparing drug repositioning approaches that use unsupervised learning and patient data from electronic medical records against supervised learning with known drug-disease relationship.

#### Scotiabank

# Presentation #88 | Tsz Fung Yau

## Two-Stage Deep-Learning Framework for Understanding Scanned Documents

Using a deep OCR model to identify texts and a transformer language model to extract relevant texts

# Shopify

# Presentation #89 | Tianguan (Andy) Di

# Towards Optimized E-Commerce: Examining Performance-affecting Factors for Online Retail Platforms

Through A/B tasting and user studies, we analyzed the impact of three experience enhancements on the conversion rates of e-commerce platforms.

# Signal 1

# **Presentation #73** | Jingtao Zhou

# **Visualizing Al-Powered Patient Insights**

Enhancing Machine Learning Interpretability and Explainability in Healthcare

## Presentation #90 | Shixuan (Nadia) Li

# Using Multi-Modal Data and Self-Supervised Approaches for Deep Learning in Healthcare

Transformers that simultaneously learn from time series and text data via self-supervised learning, thereby improving clinical predictions

#### SOTI

#### **Presentation #91** | Yichen Shen

#### Cross-Account and Cross-Platform Cloud Cost Optimization: An Integrated Management for AWS and Azure

Harmonizing Costs: Streamlining Management Across Multiple Cloud Platforms and Accounts

#### **Presentation #92** | Yao-Chen Chi

#### Benchmark Performance of Remote Control Operations Across Varied Mobile Device in Different Environments

Quantifying Latency in Remote Android Device Management: Emulation, Measurement, and Scaling Insights.

## Presentation #93 | Xinman Liu

#### Simulation of Device Location

Optimizing the testing of location-based services and location-aware applications with a configurable location simulation tool.

#### **Presentation #94** | Jazib Ahmad

## Reactive-Proactive Obstacle Avoidance for Autonomous UAVs in Dynamic Indoor Environments

Drones Coexisting Peacefully with Humans & Gracefully Evading Unplanned Encounters

#### **Presentation #95** | Hosuk (Jimmy) Woo

## **Smartphone Indoor Localization: A Sensor Fusion Approach**

Seamless indoor localization of smartphones without use of external hardware devices

## **Presentation #96** | Jaspreet Singh Dhani, Simrat Bains

# Cracking the Code: Gherkin Test Prioritization for Improved CI/CD Efficiency

Expediting regression and acceptance testing for incoming code changes by using software metrics and NLP methods to pinpoint an optimal Gherkin test subset.

# Presentation #97 | Yuxuan Zhang

# Model Compression for Unmanned Aerial Vehicle's Companion Computer

Accuracy & Latency Optimization and Tradeoff for Segmentation Models

# Presentation #98 | Devashish Pradeep Khairnar

#### MABS: Make All Batteries Smart

Enhancing Battery Performance and Health Prediction: Smart Solutions for Smart and Non-Smart Lithium-ion Batteries

#### Presentation #99 | Xuduo Gu

# **Network Traffic Anomaly Detection by Clustering with Autoencoder Ensembling**

An expectation-maximization approach to detect network traffic anomalies in real-time by clustering network packets with autoencoders.

# Presentation #100 | Ruoqi Shu

#### **Data Communication Optimization Between Mobile Devices and Servers**

Insight of Enhancing Protocol Performance Through Bandwidth Analysis and Predictive Modeling

# Presentation #101 | Yulin (Patrick) Wang

## Driver Behavior Analysis Using Sensor Data On Android Devices

Software solution capable of collecting and analyzing sensor data from android devices and reporting road safety and driving behavior metrics for moving vehicles

# SpassMed Inc.

# Presentation #102 | Chen Dan, Bingjie (Lily) Shen, Yuwei Liu

# Early Septic Shock Detection Using Vital Signs Forecasting and Classification

Utilizing deep learning, we forecast vital signs and employ different methods to detect sepsis and septic shock in time series data.

#### Tesla

## Presentation #66 | Ilan Gofman

## **Machine Learning for Vehicle Diagnostics Automation**

Investigating Time Series Classification Methods for Vehicle Failure Mode Detection

# The Hospital for Sick Children

# Presentation #103 | Adrian Yung

# Analysis of Single Cells in Pediatric Brain Tumours with Transfer Learning and a Pre-trained Transformer Model

Transfer learning and a context-aware, attention-based, deep learning transformer model is applied to analyze individual cells from pediatric brain tumours, simulating gene overexpression and deletion to investigate contributors to metastasis

#### Presentation #104 | Sarah Hindawi

#### Prediction of Genetic Mutations in Pediatric Brain Tumors Using Pathology Images

Multimodal Genetic Mutation Prediction: Leveraging Convolutional Neural Networks for Advanced Histology Analysis and Evaluating the Impact of Clinical Data Integration

# The Vanguard Group

#### **Presentation #105** | Keerat Guliani

## **Enabling Large Language Models at Vanguard**

Efficient Training and Usage of Domain Specific LLMs

#### Ubisoft

## **Presentation #106 | Tuan Nguyen**

# **Facial Landmark Detection with Synthetic Data**

Detecting facial landmarks on videos, by leveraging a synthetic dataset of rendered 3D faces

#### **Presentation #107** | Yan Ma

#### **Learning Unrestricted Facial Geometry from Lightstage Images**

Push the quality of high-fidelity 3D face avatar generation to reach AAA production-level needs.

# Presentation #108 | Yuchen Chen

#### Video Based Animation Retrieval

Finding similar animations using human motions in video sources

## Unilever

#### Presentation #110 | Xiaolan (Landy) Xu

## Advancements in Multi-Objective Optimization Algorithms to Trade Promotion Strategy

Employing stochastic search methods and the temperature cooling schedule for Multi-Objective Optimization Algorithms

# **Presentation #111** | Jingbo Yang

# Analyzing Sales Cannibalization Through Utility Theory to Improve Accuracy of Predicting POS

Quantifying the Impact of Product Attributes on Consumer Purchase Decisions

## Presentation #112 | Yu Pang

# Project Sonata: Al-Driven Recommendation & Consumer Segementation Platform of Unilever NA

A Recommendation Engine to Enable Multiple Related Downstream Tasks for Unilever NA

# **University Health Network**

# Presentation #109 | Haoran Sheng

## **Unsupervised Data Extraction from Radiology Reports with LLMs**

Building an unsupervised NLP pipeline to extract nuggets of data from a vast 20 year archive of unstructured radiology reports.

# Presentation #113 | Haining Tan

#### Visual Perception of Walking Environments Using Deep Learning and Large Language Models

Stair obstacle detection using Al-powered smart glasses and image captioning of walking environments using generative vision-language models to provide assistance to patients with visual impairments

# **University of Toronto Schools**

# Presentation #114 | Jingyu Liu

# Transforming Learning Through Al-Enhanced Online Discussions: Collaboration, Equity, and Assessment

Helping support 'sober second thought' before the online harm begins

# **Unmodal Research**

# Presentation #115 | Cheng (Jamie) Xu

#### Project Li-Tooth: Scalable, High-Bandwidth Optical Information Broadcast for Spatial Computing

Space aware, line-of-sight data broadcast using VLC/OCC hybrid

# **Veeva Systems**

# Presentation #116 | Haoteng Wang

Explore New Initiatives on RIM Submissions Archive's Support of eSTAR FDA Medical Device Submission Format

With a focus on memory optimization for the importing and extraction of eSTAR submissions