IMVIP 2025

Irish Machine Vision and Image Processing Conference
1st - 3rd September 2025, Derry~Londonderry

Conference Programme

Monday 1st Sept

1:00pm Conference Registration (MU Building, Ulster University)

2:00pm Keynote – Dr. Cornelia Fermuller

Learning to Play: AI Technologies for Supporting Violin Instruction and Motor Skill Acquisition

3:00pm - 3:40pm Machine Learning Techniques & Applications I

Benchmarking EfficientTAM on FMO datasets

Senem Aktas, Charles Markham, John McDonald and Rozenn Dahyot.

Optimising Replay Memory Selection via Dimensionality Reduction Techniques in Continual Learning

Joe Murtagh

3:40pm Coffee

4:00pm – 5:40pm: Medical Imaging & Healthcare Applications I

Curated Datasets for Machine Learning-Based Modelling of Stimulated Osteoblasts-on-chip

Brian Collins, Dost Muhammed, Tanya Levingstone, Nicholas Dunne and Malika Bendechache

An Explainable Radiomics Framework for Differential Diagnosis of Multiple Sclerosis and Ischemic Stroke Lesions

Nighat Bibi, Kathleen M. Curran, Ronan P. Killeen and Jane Courtney

Retraining is all you need: Few-shot fine-tuning for Cross-modality Domain Adaptation in Medical Imaging

Annisa Judya Sugiarti, Ray Burke, Jesús Martínez del Rincón and Simon Toft Sorensen

Diffusion Model-based Data Augmentation Method for Fetal Head Ultrasound Segmentation

Fangyijie Wang, Kevin Whelan, Félix Balado, Kathleen M. Curran and Guénolé Silvestre

Combining self-attention and convolution to understand OCT images

Abbas Haider, David Wright, Ruth Hogg, Hui Wang, Tunde Peto and Richard Gault

Tuesday 2nd Sept

9:30am Keynote - Oisin Mac Aodha

Learning from Visual Data in the Wild

10:30am – 11:15am Coffee and Posters I

Automated Segmentation of Brain Metastases in MRI Using Deep Transfer Learning Techniques

Eshwari Muralikrishna, Avneesh Dubey and Claudia Mazo

Evaluation of 3D Gaussian Splatting in Plant Reconstruction

Aaron McAfee, Thomas Pluck, Rozenn Dahyot and Gerry Lacey

Thermal Camera and LiDAR Sensor Calibration Pipeline Using ROS2

Carlos Gonzalez Visiedo and Jahan Zeb Gul

AdMoteNet: Adaptive Network for Emotion Understanding in Visual Content

Riju Das, Sukriti Dhang, Mimi Zhang and Soumyabrata Dev

A Computer Vision Technique for the Validation of Wildfire Models using a Desktop Apparatus

Conor Hackett, Rafael de Andrade Moral, Denise Rooney, Michelle Doran and Charles Markha

Intelligent Point Prompt Generation for Interactive Segmentation

Victoria Porter, Iain Styles, Tim Curtis and Richard Gault

Automated Classification of Pediatric Brain Tumor Location Using SIFT and Machine Learning

Ayse Keles, Ramin Ranjbarzadeh, Pinar Akdemir Ozisik and Malika Bendechache

Real-Time Embedded High Resolution Object Detection from Unmanned Aerial Vehicles Using YOLOX

Richard Turner, Natasha Kholgade Banerjee and Sean Banerjee

11:15am – 12:35pm: Robotics & Autonomous Systems

A Closed-Loop Vision System Framework for Autonomous Spacecraft Rendezvous

Jake O'Brien, Gerard Lacey and James Murphy

Multi-View Thermal Video Vision Transformer for Detecting Box Weight and Human Effort for Industrial Assistive Robots

Yaswanth Alla, Yu Liu, Natasha Kholgade Banerjee and Sean Banerjee

Orientation Prediction for Robotic Manipulation: Angle Encoding Strategies for Linear Regression

Antonio Gambale, Sonya Coleman, Dermot Kerr, Philip Vance, Emmett Kerr, Cornelia Fermuller and Yiannis Aloimonos

Lightweight CNN Benchmarks for Facial Emotion Recognition in Pepper Robot Applications

Jonathan Robinson, Philip Vance, Nazmul Siddique and Pratheepan Yogarajah

12:35pm - 1:20pm Lunch

1:20pm – 3:00pm: Machine Learning Techniques & Applications II

An Adaptive Motion Tracking Method for Sports Analytics

Samuel Venezia, Sonya Coleman and Dermot Kerr

MiKAD: Memory-Infused Knowledge Networks for Manufacturing Anomaly Detection

Muhammad Rashid Rasheed, Sonya Coleman, Bryan Gardiner, Philip Vance, Cormac McAteer, Khoi Nguyen and Bryan Baker

A Stochastic Birth-and-Death Approach for Street Furniture Geolocation in Urban Environments

Evan Murphy, Marco Viola and Vladimir Krylov

Bridging the Reality Gap: A Framework for Synthetic Data Generation in Smart Manufacturing

Yasir Ijaz, Sonya Coleman, Dermot Kerr, Nazmul Siddique, Cormac McAteer, Bryan Baker and Khoi Nguyen

Hyperspectral Fingerprinting for Plant Health

Melissa Melaugh, Sonya Coleman and Dermot Kerr

3:00pm – 3:45pm Coffee and Posters II

AFS-MHMD: Adaptive Fusion Strategies for Multimodal Hateful Meme Detection

Himanshu Singh, Arnav Jain, Seema Wazarkar and Muskaan Singh

Deep Learning Based Segmentation of Retinal Layers from OCT Imaging

Alex Baine, Abbas Haider, Ruth Hogg and Richard Gault

Ablation Study on Convolutional Neural Network-Transformer Fusion

Lucas Hindes, Nazmul Siddique, Sonya Coleman and Philip Vance

Exploring Deep Learning Approaches to Whole Slide Image Compression

Christopher Smith and Richard Gault

WasteWatch: Intelligent Waste Level Detection

Benn Henderson, Sonya Coleman, Dermot Kerr and Justin Quinn

A Convolutional Neural Network Bagging Ensemble for Human Emotion Classification using the AffectNet Dataset

Jonathan Robinson, Philip Vance, Nazmul Siddique and Pratheepan Yogarajah

3:45pm – 5:25pm: Computer Vision & Image Processing

FisheyeGaussianLift: BEV Feature Lifting for Surround-View Fisheye Camera Perception

Shubham Sonarghare, Prasad Deshpande, Ciaran Hogan, Deepika-Rani Kaliappan-Mahalingam and Ganesh Sistu

SP-FGSM - Salient Pixel Masking for Improved Adversarial Attack Concealment

David McCaughey, Niall McLaughlin and Jesus Martinez-del-Rincon

RandSaliencyAug++: Saliency-Based Data Augmentation for Improved Generalization Across Diverse Tasks

Teerath Kumar, Alessandra Mileo and Malika Bendechache

Lightweight 3D GAN Inversion for TriPlaneNet: Balancing Reconstruction Fidelity and Computational Efficiency for Real-Time Applications

Assadig Abakr, Jane Courtney and Steven Davy

One Model, Many Applications: Resource-Efficient Multi-Dataset Training for General-Purpose Image Classification

Tehseen Ullah, Steven Davy and John Kelleher

5:30pm: IPRCS AGM

7:00pm Drink Reception and Conference Dinner - City Hotel

Wednesday 3rd Sept

9:30am Keynote - Abulele Mditshwa

Leveraging AWS Rekognition for Advanced Computer Vision Applications: Industry Use Cases and Best Practices

10:30am - Coffee

11:00am – 12:00pm: Medical Imaging & Healthcare Applications II

Sins of Omission: How Class Imbalance Undermines Parasite Detection in Microscopy Images

Thabang Isaka, Claire Wynne and Jane Courtney

High Dynamic Range Tone Mapping for Confocal Microscopy Images

Yelyzaveta Razumovska, Allister Pattison, Iain Styles and Richard Gault

MRUF-Net: A U-Net Based Retinal Vessel Segmentation with Retinex Contrast Enhancement and Focal-Weighted loss Function

Hossein Komijani, Bryan Gardiner, Pratheepan Yogarajah and Dermot Kerr

12:00pm - Lunch