IJCAI 2021

International Workshop on Continual Semi-Supervised Learning

First Edition

August 19-20 2021 | Montreal, Canada (Virtual)

Introduction

Whereas continual learning has recently attracted much attention in the machine learning community, the focus has been mainly on preventing the model updated in the light of new data from 'catastrophically forgetting' its initial knowledge and abilities. This, however, is in stark contrast with common real-world situations in which an initial model is trained using limited data, only to be later deployed without any additional supervision. In these scenarios the goal is for the model to be incrementally updated using the new (unlabelled) data, in order to adapt to a target domain continually shifting over time.

The aim of this workshop is to formalise this new *continual semi-supervised learning* (CSSL) paradigm, and to introduce it to the machine learning community in order to mobilise effort in this direction. We present two new benchmark datasets for this problem and propose a number of challenges to the research community.

The goal of this workshop is to propose to the research community in artificial intelligence and machine learning the new continual semi-supervised learning problem. At the same time, we will accept papers on continual learning in its broader interpretation, covering for instance the following topics:

- Analysis of suitability of existing datasets for continual learning.
- New benchmark datasets explicitly designed for continual learning settings
- Protocols for training and testing in different continual learning settings
- Metrics for assessing continual learning methods.
- Task-based continual learning.
- Relation between continual learning and model adaptation.
- Learning of new classes as opposed to learning from new instances.
- Real-world applications of continual learning.
- Catastrophic forgetting and mitigation strategies.
- Applications of transfer learning, multi-task and meta-learning to continual learning.
- Continual supervised, semi-supervised and unsupervised learning.
- Lifelong, few-shot learning.
- Continual reinforcement and inverse reinforcement learning.

The list is in no way exhaustive, as the aim is to foster the debate around all aspects of continual learning, especially those which are subject of ongoing frontier research. We invite both paper track contributions on these topics, as well as submissions of entries to a set of challenges specifically designed to test CSSL approaches.

News and Updates

- March 15: The International Workshop on Continual Semi-Supervised Learning is accepted @ IJCAI 2021!
- March 25: Initial version of the website is online.
- April 1st: Challenges open for registration

Program Schedule

CSSL @ IJCAI – Final schedule

August 19 – 14:00 – 18:00 UTC	
14:00	Opening remarks
14:10-15:10	Presentation of the benchmarks and challenges
15:10-15:40	Invited talk #1 – Razvan Pascanu
15:40-16:10	Invited talk #2 – Bing Liu

16:30-17:30	Poster session 1
17:30:18:00	Best student paper award oral presentation
August 20 - 14:00 – 18:00 UTC	
14:00-14:30	Best paper oral presentation
14:30-15:30	Poster session 2
15:30-15:50	**Coffee break**
15:50-16:20	Invited talk #3 – Tinne Tuytelaars
16:20-16:50	Invited talk #4 – Chelsea Finn
16:50-17:50	Panel on future of continual learning
17:50-18:00	Award ceremony and closing remarks

Challenges

Challenges open for registration: April 1 2021

Training and validation fold release: May 5 2021

Test fold release: June 30 2021

Submission of results: July 29 2021

Announcement of results: July 30 2021

Workshop: August 19-20 2021 (UK Afternoon/Evenings)

Precise schedule would be announced later

Paper Track

Paper submission: July 2 2021

Author notification: July 19 2021

Camera-ready submission: July 31 2021

Accepted Papers:

1. Unsupervised Continual Learning Via Pseudo Labels
2. Transfer and Continual Supervised Learning for Robotic Grasping through Grasping Features
3. Unsupervised Continual Learning via Self-Adaptive Deep Clustering Approach
4. Evaluating Continual Learning Algorithms by Generating 3D Virtual Environments
5. A Benchmark and Empirical Analysis for Replay Methods in Continual Learning
6. SPeCiaL: Self-Supervised Pretraining for Continual Learning
7. Distilled Replay: Overcoming Forgetting through Synthetic Samples
8. Hypernetworks for Continual Semi-Supervised Learning
9. Self-supervised Novelty Detection for Continual Learning: A Gradient-based Approach Boosted by Binary Classification
10. Self-Improving Semantic Perception for Indoor Localisation
11. SSUL: Semantic Segmentation with Unknown Label for Exemplar-based Class-Incremental Learning
12. International Workshop on Continual Semi-Supervised Learning: Introduction, Benchmarks and Baselines

Download Papers

Invited Speakers

Razvan Pascanu

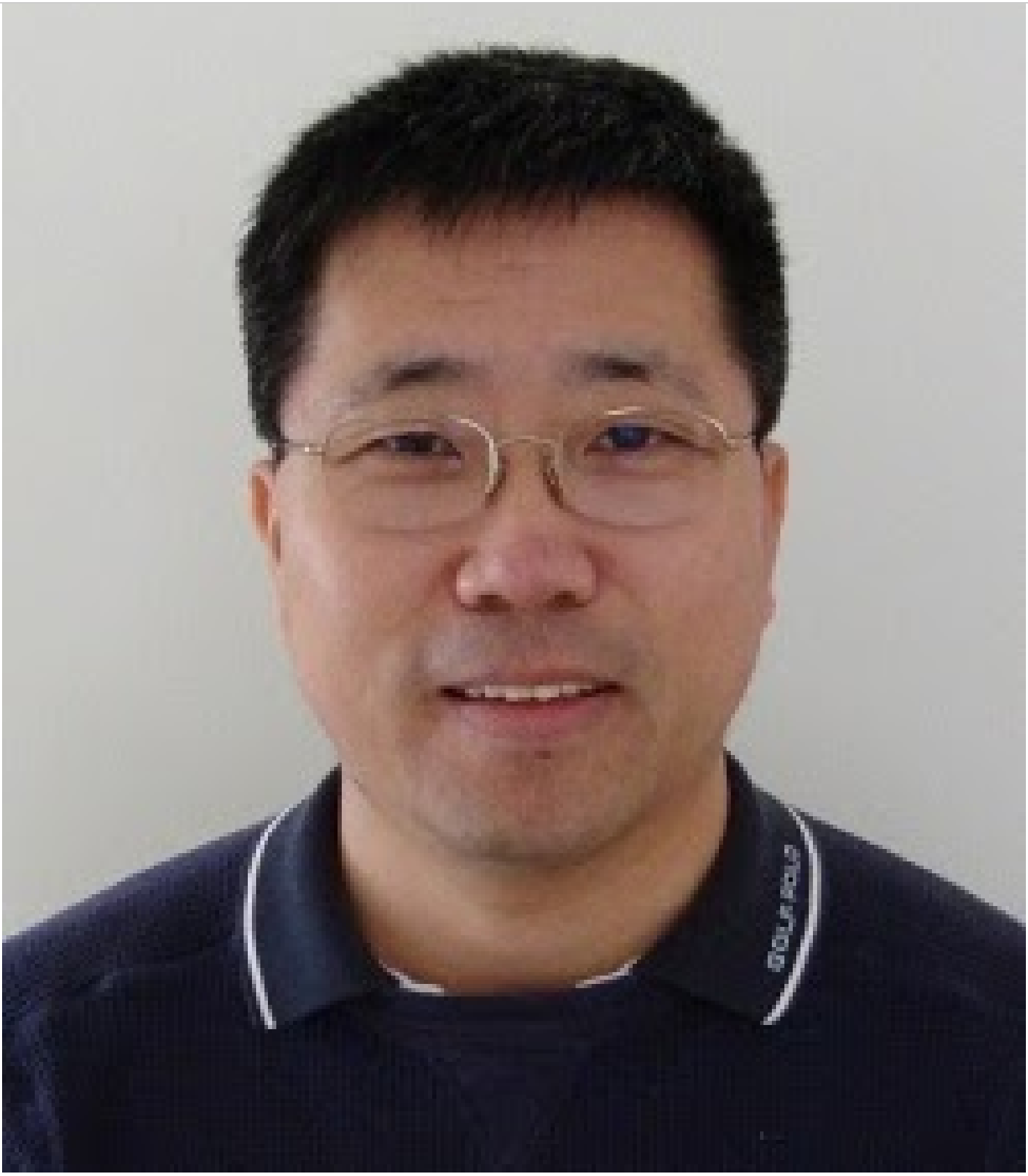
Deepmind

Tinne Tuytelaars

KU Leuven

Chelsea Finn

Stanford



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