

## SEMINAR ANNOUNCEMENT

DEPARTMENT OF ELECTRICAL AND COMPUTER ENGINEERING  
COLLEGE OF DESIGN AND ENGINEERING  
Website: <https://cde.nus.edu.sg/ece>

**Area: Signal Analysis & Machine Intelligence**

**Host: Assoc Prof Tan, Robby Tantowi**

**Research Seminar**

|         |   |                                                                                                                                                                                                                                      |
|---------|---|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| TOPIC   | : | How To Interact Less While Performing Better In Continual Learning                                                                                                                                                                   |
| SPEAKER | : | Dr Pan Yangchen<br>Senior Researcher at Huawei Technologies, Canada                                                                                                                                                                  |
| DATE    | : | Monday, 4 July 2022                                                                                                                                                                                                                  |
| TIME    | : | 10.00AM to 11.00AM                                                                                                                                                                                                                   |
| VENUE   | : | Join Zoom Meeting<br><a href="https://nus-sg.zoom.us/j/4156763801?pwd=NUwzUWhwdlZlcGt3cmhyTzFld1V0QT09">https://nus-sg.zoom.us/j/4156763801?pwd=NUwzUWhwdlZlcGt3cmhyTzFld1V0QT09</a><br>Meeting ID: 415 676 3801<br>Passcode: 662108 |

### ABSTRACT

A Reinforcement Learning (RL) agent learns by interacting with the environment it lives in. Like human beings, as the agent interacts more, it gets more experienced and hence becomes better at decision making. Such a learning setting, despite being realistic and ambitious, its application in the industry is still quite limited. A scientific hurdle to putting RL agents into practical use is low sample efficiency—requiring too many interactions with the real world to achieve good performance. Improving sample efficiency is challenging for an RL agent, as many RL tasks are considered continual learning, which refers to the setting involving particular challenges such as the shift of data sampling distribution, memory and computation constraints when learning across a long/infinite-time horizon.

### BIOGRAPHY

Yangchen Pan obtained his Ph.D. degree from the University of Alberta last year, under the supervision of Dr. Martha White from the University of Alberta and Dr. Amir-massoud Farahmand from the University of Toronto. Before transferring to the University of Alberta, he was a Ph.D. student at Indiana University at Bloomington in the United States. He is broadly interested in machine learning, focusing on reinforcement learning. His research covers a broad range of topics: improving data efficiency of learning algorithms by developing mathematical optimization techniques, mitigating catastrophic forgetting by sparse representation, and improving the scalability of reinforcement learning algorithms and kernel representations. He has published and reviewed papers at well-known AI/ML conferences. He also serves as a reviewer for journals such as the Journal of Machine Learning Research (JMLR) and Transactions on Machine Learning Research (TMLR). He won the outstanding reviewer award at NeurIPS 2021 and the top reviewer award at AISTATS 2022.

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