Lingwei Zhu

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Personal Page

Google Scholar

Born 25 Aug 1995

Personal Statement

Currently I am a Postdoc with Martha White at the University of Alberta. I obtained my PhD at Robot Learning Lab of Nara Institute of Science and Technology (NAIST), under the supervision of Takamitsu Matsubara. I received the master degree from Intelligent System Control Lab, NAIST.

Scholarship/Award

Apr. 2021 – Sep. 2022 Japan Society for Promotion and Science - DC2

Apr. 2020 – Mar. 2021 Japanese Government Scholarship (MEXT)

Mar. 2021 IEEE Kansai Section Student Paper Award

Education

Oct. 2019 - Sep. 2022

Doctor of Engineering - NAIST

I researched entropy regularized RL algorithms and their applications on large-scale systems specifically on industrial processes and robots.

Oct. 2017 - Sep. 2019

Master of Engineering - NAIST

During my master I proposed the first successful RL algorithm for plant-wide control of a large-scale chemical process in simulation.

Publications/Patents

Journal

- Y. Kadokawa, Lingwei Zhu, Y. Tsurumine, T. Matsubara
  Cyclic Policy Distillation: Sample-Efficient Sim-to-Real Reinforcement Learning with Domain Randomization, *RAS*, 2022, under review
- Z. Chen†, Z. Yang†, Lingwei Zhu†, et al.
  Cancer Subtyping by Improved Transcriptomic Features Using Vector Quantized Variational Autoencoder, *IEEE TNSRE*, 2022, under review, link,
- Z. Chen, Z. Yang, Lingwei Zhu, et al.
  Automated Sleep Staging via Parallel Frequency-Cut Attention, *IEEE TNSRE*, 2022, under review, link,
- Lingwei Zhu, Y. Cui, G. Takami, H. Kanokogi, T. Matsubara
  Scalable Reinforcement Learning for Plant-wide Control of Vinyl Acetate Monomer Process, *Control Engineering Practice (IF: 3.475)*, Vol. 97, April 2020, link,
- Lingwei Zhu, T. Kitamura, T. Matsubara
  Exploiting KL Regularization in Monotonic Policy Improvement for Reinforcement Learning, *Neural Networks (IF: 8.05)*, `major revision, revised manuscript submitted`
- Lingwei Zhu, G. Takami, M.Kawahara, H. Kanokogi, T. Matsubara
  Alleviating Parameter-tuning Burden in Reinforcement Learning for Large-scale Process Control, *Computers and Chemical Engineering (IF: 3.845)*, Vol. 158, Jan. 2022, link,

Conference

- Z. Chen†, Lingwei Zhu†, Z. Yang, T. Matsubara
  Automated Cancer Subtyping via Vector Quantized Mutual Information Maximization, ECML-PKDD, 2022, (acceptance rate 26%) link
- Z. Chen†, Lingwei Zhu†, Z. Yang, R. Zhang
  Multi-Tier Platform for Cognizing Massive Electroencephalogram, IJCAI, 2022, (acceptance rate 15%) link
- Z. Yang, Lingwei Zhu, Z. Chen, et al.
  Cancer Subtyping via Embedded Unsupervised Learning on Transcriptomics Data, EMBC, 2022, link
- Lingwei Zhu, K. Odani, Z. Yang, et al.
  Adaptive Spike-Like Representation of EEG Signals for Sleep Stages Scoring, EMBC, 2022, link
- Lingwei Zhu, T. Kitamura, T. Matsubara
  Cautious Actor-Critic, Asian Conference on Machine Learning (ACML), 2021, (acceptance rate 30.4%) link
- T. Kitamura, Lingwei Zhu, T. Matsubara
  Geometric Value Iteration: Dynamic Error-Aware KL Regularization for Reinforcement Learning, ACML, 2021, link
- Lingwei Zhu, Y. Cui, T. Matsubara
  Dynamic Actor-Advisor Programming for Scalable Safe Reinforcement Learning, ICRA, 2020, link
- Y. Cui†, Lingwei Zhu†, T. Matsubara
  Factorial Kernel Dynamic Policy Programming for Vinyl Acetate Monomer Plant Model Control, CASE, 2018, link

Patents

- United States patent (inventor of apparatus, method, program and recording medium, same as below; Patent Number US20200057416A1).
  Takamitsu Matsubara, Yunduan Cui, Lingwei Zhu, et al.
- European patent (EP3620868A1). Takamitsu Matsubara, Yunduan Cui, Lingwei Zhu, et al.
- Chinese patent (CN110837893A). Takamitsu Matsubara, Yunduan Cui, Lingwei Zhu, et al.
- Japanese patent (JP2020027556A) Takamitsu Matsubara, Yunduan Cui, Lingwei Zhu, et al.

Work Experience / Professional Activities

Work Experience

JSPS-KAKENHI funded researcher

Apr.2021 - Sep. 2022

Jan. 2022 - Jun. 2022 Research Intern, Advanced Telecommunication Research (ATR)

Apr.2018 - Sep. 2022 Research Technician, NAIST-Yokogawa cooperated research

Reviewer

Association for the Advancement of Artificial Intelligence (AAAI)
European Conference on Machine Learning (ECML)
IEEE Robotics and Automation Letter (RAL)
IEEE International Conference on Robotics and Automation (ICRA)