# Toshinori Kitamura

📞 (+8180) 3257-9314  |  ✉ syuntoku14@gmail.com  |  ⌨ syuntoku14

## Education

**The University of Tokyo** *2023*

DEPARTMENT OF ENGINEERING, D3, GPA: N/A
- **Nara Institute of Science and Technology (NAIST)**, GPA: 3.3/4.0 — Graduate School of Science and Technology
- **Keio University**, GPA: 3.3/4.0 — *Faculty of Science and Technology (System Design Engineering)*
- **University of California Davis**, GPA: 3.9/4.0 — ***Dean's List***, *Exchange student 2018-2019*

## Publications

### Recent Working Drafts
- "Provably Efficient RL under Episode-Wise Safety in Constrained MDPs with Linear Function Approximation"
    - **Toshinori Kitamura**, Arnob Ghosh, Tadashi Kozuno, Wataru Kumagai, Kazumi Kasaura, Kenta Hoshino, Yohei Hosoe, Yutaka Matsuo, Arxiv 2025

### Conference Proceedings
- "Near-Optimal Policy Identification in Robust Constrained Markov Decision Processes via Epigraph Form"
    - **Toshinori Kitamura**, Tadashi Kozuno, Wataru Kumagai, Kenta Hoshino, Yohei Hosoe, Kazumi Kasaura, Masashi Hamaya, Paavo Parmas, Yutaka Matsuo, **ICLR 2025**
- "Regularization and Variance-Weighted Regression Achieves Minimax Optimality in Linear MDPs: Theory and Practice"
    - **Toshinori Kitamura**, Tadashi Kozuno, Yunhao Tang, Nino Vieillard, Michal Valko, Wenhao Yang, Jincheng Mei, Pierre Ménard, Mohammad Gheshlaghi Azar, Rémi Munos, Olivier Pietquin, Matthieu Geist, Csaba Szepesvári, Wataru Kumagai, Yutaka Matsuo, **ICML 2023**
- "Geometric Value Iteration: Dynamic Error-Aware KL Regularization for Reinforcement Learning"
    - **Toshinori Kitamura**, Lingwei Zhu, Takamitsu Matsubara, **ACML 2021**
- "Cautious Actor-Critic: Stable off-policy deep reinforcement learning for continuous control"
    - Lingwei Zhu, **Toshinori Kitamura**, Takamitsu Matsubara, **ACML 2021**

### Preprint, Domestic Conference, and Workshop Papers
- "A Policy Gradient Primal-Dual Algorithm for Constrained MDPs with Uniform PAC Guarantees"
    - **Toshinori Kitamura**, Tadashi Kozuno, Masahiro Kato, Yuki Ichihara, Soichiro Nishimori, Akiyoshi Sannai, Sho Sonoda, Wataru Kumagai, Yutaka Matsuo, RLC Safety WS 2024 (oral)
- "On Various Problem Settings of Sequential Decision Making and How Prior Knowledge of Problems Affects Theoretical Guarantees"
    - Tadashi Kozuno, **Toshinori Kitamura**, Yuki Ichihara, Makoto Hagiwara, JSAI 2023
- "KL-Entropy-Regularized RL with a Generative Model is Minimax Optimal"
    - Tadashi Kozuno, Wenhao Yang, Nino Vieillard, **Toshinori Kitamura**, Yunhao Tang, Jincheng Mei, Pierre Ménard, Mohammad Gheshlaghi Azar, Michal Valko, Rémi Munos, Olivier Pietquin, Matthieu Geist, Csaba Szepesvári, Arxiv 2022
- "ShinRL: A Library for Evaluating RL Algorithms from Theoretical and Practical Perspectives"
    - **Toshinori Kitamura**, Ryo Yonetani, NeurIPS RL Workshop 2022

## Experience

### Research
- **RIKEN Center for Advanced Intelligence Project Deep Learning Theory Team** (2023-)
    - Statistical RL theory research: constrained RL and general function approximation.
- **The University of Tokyo Matsuo Lab** (2022-)
    - Statistical RL theory research: constrained RL, general function approximation, KL-Entropy regularization, etc.
- **NAIST Robot Learning Lab** (2020-2022)
    - Research on error propagation analysis of KL-Entropy regularized DP.
- **OMRON SINIC X Corporation** (2021-2022, 2023-2024)
    - Research on RL library with JAX & statistical RL theory
- **National Institute of Advanced Industrial Science and Technology** (2019-2020)
    - RL application research for mobile robot in human crowds.
- **UC Davis Chen-Nee Chuah Lab** (2019)
    - RL application research for traffic control.

### Teaching
- **Deep RL Spring Seminar**: Slides1 (DP), Slides2 (Multi-step RL)
- **Deep Learning Course**

### Working
- **Robotics**: **Integral AI, Inc.** (2022), **Ugo, Inc.** (2018)

# Projects

Please visit `https://syuntoku14.github.io/#projects`