Low, Siow Meng

ML researcher — safe RL with feedback; exploring RL × LLMs

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Research Summary

- Focus: safe reinforcement learning and alignment from **sparse / weak feedback** (e.g., pass/fail safety labels), with interest in RL×LLMs.
- **TraCeS** turns rollout-level safety labels into per-step safety signals, enabling agents to learn safer behavior without hand-designed safety costs.
- Developed methods for safe learning/planning under implicit or hard-to-specify constraints (AAAI'22, ICAPS'23, arXiv'24; ICLR'25 workshop).

Education

Singapore Management University (SMU), Singapore — PhD, Computer Science *2020 – 2025*
Thesis: *From sparse feedback to sequential decision-making: Learning safety constraints with weak supervision.* (thesis link)
Awards: SMU Presidential Doctoral Fellowship in Computing (AY2022/23, AY2023/24).

Imperial College London, United Kingdom — MSc, Business Analytics *2016 – 2017*
Distinction; Dean's List; Book Prize (Best overall performance).

National University of Singapore (NUS), Singapore — BEng, Electrical Engineering (First Class Honours) *2004 – 2008*
CGPA 4.64/5.0; NUS Centre of Intelligent Control Book Prize (2006); Dean's List (2005, 2006).

Publications

Under review / working paper

- **Low, S. M.**, Gong, Z., Kumar, A. *TraCeS: Learning per-timestep constraint-violation credit from sparse trajectory-level labels* (extended version; under review).

Refereed and public manuscripts

- **Low, S. M.**, Kumar, A. *TraCeS: Trajectory Based Credit Assignment From Sparse Safety Feedback.* ICLR 2025 Workshop on Bidirectional Human-AI Alignment (non-archival). [PDF]
- **Low, S. M.**, Kumar, A. *Safe Reinforcement Learning with Learned Non-Markovian Safety Constraints.* arXiv:2405.03005. [PDF]
- **Low, S. M.**, Kumar, A., Sanner, S. *Safe MDP planning by learning temporal patterns of undesirable trajectories and averting negative side effects.* ICAPS 2023. [PDF]
- **Low, S. M.**, Kumar, A., Sanner, S. *Sample-efficient iterative lower bound optimization of deep reactive policies for planning in continuous MDPs.* AAAI 2022. [Publisher]
- Xiao, W., **Low, S. M.**, Tham, C. K., Das, S. *Prediction based energy-efficient task allocation for delay-constrained wireless sensor networks.* SECON Workshops 2009. [Publisher]

Experience

Singapore Management University (SMU), Singapore — Adjunct Lecturer *Aug 2025 – Present*

- COR-IS1704 Computational Thinking and Programming (Python), AY2024/25 T1. Final rating: above 90th percentile across SMU faculty.

- CS205 Operating Systems (undergraduate core), AY2025/26 T1.
- IS112 Data Management (ER modeling, relational schema, SQL, indexing / performance), AY2025/26 T2.

Intech Process Automation, Singapore — IIoT Data Science Lead *2019 – 2020*

- Led applied ML work for industrial predictive analytics; designed product UI and built proof-of-concept workflows for data prep and model building.

Amaris.AI, Singapore — AI Data Scientist *2018 – 2019*

- Built real-time social media text mining + sentiment platform; delivered automated forecasting solution for an electricity market operator.

NEC Laboratories Singapore — Researcher (Intelligent Data Analytics) *2017 – 2018*

- Built ML models for risk profiling; improved prediction accuracy by 50% over prior heuristics; delivered interpretable factor visualizations for intervention.

IBM, Singapore — Software Presales Consultant *2013 – 2015*
Selected outcomes: designed proofs-of-concept; contributed to annual software revenue ~US$1M.

Deloitte, Singapore — Senior Software Consultant *2008 – 2013*
Led delivery teams; designed/integrated solutions across 30+ systems; improved productivity metrics by ~6×.

Service

Reviewer: NeurIPS (2024, 2025); ICLR (2025, 2026); AAAI (2023, 2024, 2026); ICAPS Planning & Learning Track (2022, 2023).
Singapore Computer Society: Professional Member

Skills

Research: Safe RL, weak supervision / sparse feedback, planning, constraint learning, optimization
Programming: Python, PyTorch, NumPy/Pandas, Matplotlib, SQL Languages: English (fluent), Mandarin Chinese (fluent)
Tools: Linux, Git, LaTeX