Personal Information

Dr. Yang You

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Education

10/2019–06/2023 **Ph.D Candidate, Computer Science**
Lorraine University / INRIA Nancy Grand Est, Nancy, France
Lifelong Autonomy and interaction skills for Robots in a Sensing ENvironment (LARSEN Team)
Research topics: **Planning under uncertainty, Markov Decision Process**
Thesis: Probabilistic Decision-Making Models for Multi-Agent Systems and Human-Robot Collaboration
Supervisors: Olivier Buffet, Vincent Thomas, Francis Colas

09/2018–09/2019 **M.Sc., Robotics**
Cranfield University, Bedford, UK
Project: Ball-catching robot based on control, planning and learning methods
Thesis: A human-robot collaboration decision-making framework for flying robots

09/2016–09/2019 **Ingénieur, Mechanical Engineering**
Institut National des sciences appliquées, Rouen, France
Selected for a double master's degree program at Cranfield University

03/2014–01/2016 **Bac+2, Preparatory school in Sciences**
Institut National des sciences appliquées, Rouen, France

Career Experience

10/2023–Now **PDRA in AI for Autonomous Systems**, UKAEA & Oxford Robotics Institute
As a postdoctoral research assistant, my role involves conducting research in AI for autonomous systems in collaboration with the Oxford Robotics Institute (ORI). I work on decision-making and mission planning methods for both single and multi-robot systems operating in uncertain environments, and deploy such systems to nuclear fusion related scenarios. This position requires me to split my time between RACE at UKAEA and ORI at University of Oxford. Moreover, I also manage related research and activities, including small-scale project management, leading or initiating collaborations with external members outside RACE.

Key Activities and Research Achievements:

- Participated to the development of AutoInspect, a practical and unified robotic planning and inspection system designed for realistic, mission-critical applications.
- Participated in the deployment of a SPOT robot for a fully autonomous 30-day inspection at JET, marking the worlds first autonomous inspection conducted in a nuclear fusion facility.
- Proposed and led a work package on automated radiation environment exploration and radiation mapping, developing a state-of-the-art method that overcomes the oversmoothing issue in radiation mappingdemonstrating strong potential for application in nuclear decommissioning tasks.
- Developed novel AI and decision-making algorithms for single- and multi-robot systems operating under uncertainty (see recent publications).
- Initiated and led multiple collaborations with other departments, including RadLab (Fusion Technology) for AI-based radiation mapping, and maintain an ongoing collaboration with the Oxford Robotics Institute on general AI and robotics research.

Publications

International Conferences

1. Yang You, Ufuk Cakir, Alex Schutz, Robert Skilton, and Nick Hawes. Neural Value Iteration for POMDPs. In *ArXiv*, 2025
2. Yang You, Alex Schutz, Zhikun Li, Bruno Lacerda, Robert Skilton, and Nick Hawes. Deterministic Dec-POMDPs: Formalization and Scalable Solution Methods. In *AAAI*, 2026
3. Yang You, Bruno Lacerda, Joseph Neilson, David Batty, Ipek Caliskanelli, Harun Tugal, Kaiqiang Zhang, Nick Hawes, and Robert Skilton. Autonomous Exploration of Complex Radiation Fields using Local Gaussian Processes. In *ICRA-26, Under Review*, 2026
4. Yang You, Vincent Thomas, Alex Schutz, Robert Skilton, Nick Hawes, and Olivier Buffet. Paritally Observable Monte-Carlo Graph Search. In *Proc. of the 35th International Conference on Automated Planning and Scheduling (ICAPS)*, 2025
5. Yang You, Vincent Thomas, Francis Colas, Robert Skilton, and Olivier Buffet. Online Robust Robot Planning for Human-Robot Collaboration. In *Towards Autonomous Robotic Systems (TAROS)*, 2024
6. Yang You, Vincent Thomas, Francis Colas, and Olivier Buffet. Monte-Carlo Search for an Equilibrium in Dec-POMDPs. In *Proc. of the 39th Conference on Uncertainty in Artificial Intelligence (UAI)*, 2023

7. Yang You, Vincent Thomas, Francis Colas, Rachid Alami, and Olivier Buffet. Robust Robot Planning for Human-Robot Collaboration. In *2023 IEEE Proc. of The International Conference in Robotics and Automation (ICRA)*, 2023
8. Yang You, Vincent Thomas, Francis Colas, and Olivier Buffet. Solving Infinite-Horizon Dec-POMDPs using Finite State Controllers within JESP. In *2021 IEEE 33rd International Conference on Tools with Artificial Intelligence (ICTAI)*, 2021

Others

1. Michal Staniaszek, Lara Brudermüller, Yang You, Raunak Bhattacharyya, Bruno Lacerda, and Nick Hawes. Time-bounded planning with uncertain task duration distributions. *Robotics and Autonomous Systems*, 2025
2. Michal Staniaszek, Tobit Flatscher, Joseph Rowell, Hanlin Niu, Wenxing Liu, Yang You, Robert Skilton, Maurice Fallon, and Nick Hawes. AutoInspect: Towards Long-Term Autonomous Industrial Inspection. In *IEEE Transcations on Field Robotics*, 2025
3. Yang You, Vincent Thomas, Francis Colas, Rachid Alami, and Olivier Buffet. Planification robuste pour la collaboration homme-robot. In *Actes des seizièmes journées francophones planification, décision, apprentissage pour la conduite de systèmes (JFPDA)*, 2022
4. Yang You, Vincent Thomas, Francis Colas, and Olivier Buffet. Résolution de Dec-POMDP à horizon infini à laide de contrôleurs à états finis dans JESP. In *Actes des seizièmes journées francophones planification, décision, apprentissage pour la conduite de systèmes (JFPDA)*, 2021
5. Lorenzo Vianello, Luigi Penco, Waldez Gomes, Yang You, Salvatore Maria Anzalone, Pauline Maurice, Vincent Thomas, and Serena Ivaldi. Human-humanoid interaction and cooperation: a review. *Current Robotics Reports*, 2(4):441–454, 2021

Tools & Languages

Development: C/C++, Julia, Python, ROS

AI Tool: Automated Planning, Machine learning and Deep learning, Reinforcement Learning

Language: Chinese (Native), English (TOEIC: 900/990), French (TCF B2)

Academic Services

Developer of the Julia package POMCGraphSearch.jl (state-of-the-art offline POMDP solver)

Developer of multi-agent problem (Dec-POMDP) solvers: MCJESP and InfJESP

PC members in ICAPS2024, TAROS2024, AAMAS2025, IROS2025, ECAI2025, AAAI2026, and ICAPS2026