Two Fully Funded PhD Positions in Physical AI & Biological AI

Prof. Kai Cai's Control and AI Group | Department of Informatics, Osaka Metropolitan University, Japan

Start date: April 1, 2027 • Funding: 3 years • CV deadline: November 30, 2026

We invite applications for two fully funded PhD positions at Osaka Metropolitan University (OMU), Japan. The positions offer opportunities to develop new AI and control methodologies and pursue interdisciplinary research in an international academic environment.

Position 1 | Physical AI: Intelligent and Safe Robotic Systems

Develop next-generation Physical AI systems that combine machine learning, AI reasoning, and control theory for intelligent, adaptive, and safe robotic autonomy. Research directions include:

- World models and digital twins for learning, simulation, and prediction of physical environments
- Vision-language-action (VLA) models for multimodal perception, instruction understanding, and robotic actions
- Machine learning for robotic planning, decision-making, and control
- Safe control, formal methods, and safety guarantees for autonomous systems

Position 2 | Biological AI: Machine Learning and Foundation Models for Biological Discovery

Develop novel machine learning and foundation-model methodologies for biology, in collaboration with biologists in OMU's Department of Science. Research directions include:

- Representation learning and modeling of amino acid and DNA sequences
- Generative AI for biological sequences, protein design, and molecular discovery
- Development and adaptation of biological foundation models for prediction and generation
- Machine learning for protein 3D structures and sequence–structure–function relationships

Funding and Opportunities

Both PhD positions are fully funded for three years. Students will work in an interdisciplinary research environment with opportunities for international research collaboration (in particular with researchers at University of Toronto and MIT).

How to Apply

Please email your CV (PDF) to Prof. Kai Cai at cai@omu.ac.jp. Use the subject line "PhD Application – Physical AI" or "PhD Application – Biological AI" to indicate the position of interest.

CV submission deadline: November 30, 2026. Applications will be reviewed and interviews conducted on a rolling basis until the positions are filled. Early applications are encouraged.

Homepage of our research group: www.caikai.org