Jeremy Siburian

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Tokyo, Japan

Research Interest

To fully integrate autonomous robots into our daily lives, they must be able to perform long-horizon decision-making in complex environments, continuously learn new skills throughout their lifetime, while interacting naturally with humans. To this end, my current research interests revolve around foundation models for decision-making/planning, continual skill learning, and human-robot interaction.

Education

- **The University of Tokyo** *Apr 2025 - Mar 2027 (Expected)*
  MEng in Technology Management, advised by Yusuke Iwasawa & Yutaka Matsuo Tokyo, Japan
  - Relevant Courses: Information-Theoretic Learning Theory, Robot Manipulation, Brain Information Processing Systems, Cognitive Multi-Media Processing

- **Waseda University** *Mar 2025*
  BEng in Mechanical Engineering, advised by Shigeki Sugano Tokyo, Japan
  - Relevant Courses: Fluid Dynamics, Thermodynamics, Fundamentals of Robotics, Mechatronics, Algorithms and Data Structures, Artificial Intelligence, Software Engineering, Discrete Mathematics

Publications

[1] **Jeremy Siburian***, Keisuke Shirai*, Cristian C. Beltran-Hernandez*, Masashi Hamaya, Michael Görner, Atsushi Hashimoto. **Grounded Vision-Language Interpreter for Integrated Task and Motion Planning**. *arXiv Preprint*. Available: https://arxiv.org/abs/2506.03270. [Project Page]

[2] **Jeremy Siburian***, Cristian C. Beltran-Hernandez*, Masashi Hamaya. **Integrated Task and Motion Planning for Real-World Cooking Tasks**. *ICRA 2024 Workshop on Cooking Robotics: Perception and Motion Planning*. **Best Video Award** [Demo Video]. Available: https://openreview.net/forum?id=5nGIW3Ixo1

[3] **Jeremy Siburian**, Alexander Schmitz, Tito Pradhono Tomo, Sophon Somlor, Gang Yan, Satoshi Funabashi, Shigeki Sugano. **Comparative Study of Robotic Slip Detection Algorithms using Distributed 3-Axis Tactile Sensing**. *42rd Annual Conference of the Robotics Society of Japan (RSJ) 2024*.

Research Experience

- **OMRON SINIC X Corporation [🌐]** *Oct 2023 - Mar 2024, Feb - Apr 2025*
  Robotics Research Intern, mentored by Masashi Hamaya and Cristian C. Beltran-Hernandez Tokyo, Japan
  - Developed ViLaIn-TAMP, a hybrid framework combining VLMs with integrated TAMP for long-horizon manipulation, with corrective planning for motion-failure reasoning and evaluated on real-world cooking tasks. Presented in the SAFE-ROL Workshop at CoRL 2025 and available on ArXiv [1].
  - Integrated TAMP framework for long-horizon cooking tasks, combining symbolic task planning with multi-stage motion planning, demonstrated via a dual-arm slicing system trained with reinforcement learning. Received the Best Video Award [2] in the Cooking Robotics Workshop at ICRA 2024.

- **Sugano Lab, Waseda University [🌐]** *Apr 2023 - Sep 2024*
  Undergraduate Researcher, advised by Shigeki Sugano Tokyo, Japan
  - Researched on various model-based and learning-based slip detection algorithms using tactile sensors for manipulation tasks requiring force control [3].

Industry Experience

- **Daimler Trucks Asia [🌐]** *April - September 2023*
  Manufacturing Engineering Intern, supervised by Mr. Li-Chieh Richard Chen Kanagawa, Japan
  - Developed a robotic bin picking system for assembly line deployment using 3D tactile sensors for force control and slip detection. Managed an R&D budget of 1.5 million yen (Approx. $10k USD).

Skills

- **Programming Languages:** Python, C++, Java, HTML, CSS
- **Robotics Software & Frameworks:** ROS, MoveIt, PDDLStream, PyBullet, MuJoCo, robosuite, IsaacLab
- **Libraries:** Numpy, Matplotlib, Scikit-learn, OpenCV, TensorFlow, Keras, PyTorch
- **Developer Tools:** Git, Git Tools (GitHub, GitKraken, GitLab), Docker, VS Code, PyCharm
- **Robots:** UR5e (Universal Robots), TM5-900 (Techman Robot)