Tai Inui

Interactive Systems Engineer
Novel Input Devices · Tangible Interaction · XR

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EDUCATION

Carnegie Mellon University — Expected May 2028
Master of Entertainment Technology

Waseda University — Sep 2026
Mechanical Engineering major; Computer Science and Communication Engineering minor

TECHNICAL SKILLS

Software: Python, C++, C#, Unity, Robot Operating System (ROS), PyTorch, Git
Hardware: Embedded systems, PCB design (KiCad), sensor integration, electronics prototyping, 3D printing
Design & Fabrication: Onshape, Fusion 360, Maya
Interaction: XR/VR, tangible interaction, tactile sensing, wearable sensing, haptics, teleoperation, user studies

EXPERIENCE

Sony CSL — Cybernetic Humanity Group — Feb 2025 – Aug 2026
Research Assistant | OIST, Okinawa, Japan

Applied reinforcement and imitation learning to human-augmentation and agent-embodiment research using Python, C++, simulation, and sim-to-real methods.

KAIST — IRiS Lab — Sep 2025 – Nov 2025
Visiting Student Researcher | Daejeon, South Korea

Investigated game-theoretic teleoperation assistance designed to preserve operator agency, using haptic devices, user studies, C++, and Python.

Carnegie Mellon University — BIG — Jul 2024 – Oct 2024
Visiting Collaborator | Pittsburgh, PA

Contributed to SoftBit, a VR soft-robot teleoperation project with proprioceptive visual augmentation, using Unity, C#, Python, ROS, and machine learning. Paper accepted to the HRI 2025 VAM-HRI workshop.

Tokyo Robotics — Dec 2023 – Oct 2024
Robotics Software Engineer Intern | Tokyo, Japan

Implemented and fine-tuned a vision-language-action model for a humanoid robot using Python, C++, ROS, and AWS SageMaker. [Video]

SELECTED PROJECTS

TacPose | Continuous Hand Pose Estimation — IROS 2026 Workshop
Investigated continuous hand pose estimation from wrist-worn triaxial tactile sensing at Sugano Lab.

TriForce Band | Wearable Gesture Recognition — UIST 2025 Poster
Applied triaxial tactile sensing to wrist force-myography for wearable gesture recognition. [Paper]

TerrainDiffuser | Terrain Texture Generation — CVM 2026 Technical Brief
Contributed to texture generation from text prompts and elevation data in a Simo-Serra Lab project sponsored by game studio Rikka Inc. [Paper]

MicCheck | Low-Cost Contact Sensing — CACS 2025
Repurposed pin microphones for low-cost and plug-and-play contact sensing. Received Best Session Presentation Award at CACS 2025. [Paper]

TidalTouch | Triaxial Force Sensing Fingerpad Input Device — Alt.Ctrl GDC Submission (WIP)
Created a portable device that offers a unique 10 simultaneous, independent, continuous fingertip force input experience. [Slides (Proof of Concept)]