# Dan Ogawa Lillrank

Robotics Researcher/Software Engineer

## Areas of specialization

**Robotics Automation** (Software)
- Manipulation
  - Inverse Kinematics
  - Trajectory Planning
  - (Deep) IL/RL in robotics
- Simulation:
  - IsaacSim
  - Mujoco (sim2real)
  - Drake
  - pybullet
- Navigation:
  - SLAM
  - Path Planning

**Machine Learning**
Reinforcement Learning (RL)
Imitation Learning (IL)
Computer Vision(CV)
Deep Learning(DL)
Vision Language Models

## Programming

| | |
|---|---|
| **python** | 6+ years |
| **C++** | 5 years |
| **Matlab** | 3 years |
| **C** | 2 years |

## Technical

Linux, Pytorch, Llama, scikit-learn, ROS(Moveit!), OpenCV, PCL, CUDA, MPI, Docker, Git, Jira, Confluence, AWS

## Languages

| | |
|---|---|
| **English** | Fluent |
| **Swedish** | Native |
| **Japanese** | Native |


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## Work Experiences

2021–2024 — ARAYA
**Chief Researcher**
ARAYA · Tokyo, Japan
Neurotechnology R&D Unit, Deep Reinforcement Learning research team.
Designed and implemented a comprehensive robotics stack utilizing ROS and Moveit! and Vision Language model for a Brain Machine Interface project, leading to successful integration of Franka robot arm controlled by human brain signals. Led a team of junior researchers and engineers. Team grew from 2 to 8.
**Robotics manipulation, Python, pytorch, ROS, Mujoco, IsaacSim DL, RL, IL, CV, Diffusion models**

2021-2022 — AIST
**Technical staff**
AIST National Institute of Advanced Industrial Science & Technology · Tokyo, Japan
Technical Staff/Research at AIST Automation Research team, working closely with Ogata lab. Utilizing Deep Predictive models for robot manipulation tasks.
**PyTorch, Object Segmentation, CUDA, ROS, Gazebo-sim**

2020-2021 — TELEXISTENCE
**Robotics Software Engineer**
Telexistence · Tokyo, Japan
Main software integrator for the automation team. Implemented Pick & Place workflow for the Model-T humanoid upper-torso robot by integrating perception and planning/control modules using ROS. Integration tested on the custom robot hardware. Integrated several custom grippers to the robot.
**Humanoid robot, C/C++, Python, ROS, OpenCV, OpenRave**

2019-2020 — Qbit ROBOTICS
**Robotics Software Engineer**
Qbit Robotics · Tokyo, Japan
Engineered a robust facial recognition and multi-object tracking system using ROS, Docker, and Python. Proposed & created a pipeline to store the customer information in the cloud. Data-visualization was delivered to the sales team & store manager.
**ROS, OpenCV, Object tracking, scikit-learn, panda, AWS**

## Publications

2024 **A pragmatic look at deep imitation learning**, Asian Conference on Machine Learning.

2024 **A comparison of visual and auditory EEG interfaces for robot multi-stage task control** Frontiers in Robotics and AI

2019 **Registration algorithms for matching laser scans in robotics application** Thesis work in KTH diva portal

## Education

2019 — **M.Sc · Systems, Control & Robotics**
KTH Royal Institute of Technology, Sweden

2017 — **B.Sc · Engineering Physics**
KTH Royal Institute of Technology, Swede

2017 — **M.Sc · Exchange student**
Kyoto University, Japan