

Bat Nemekhbold

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in bxtbold

Objective

Master's student with hands-on experience in robotics software, motion planning, and control, seeking an internship to contribute to research and development in robot learning, learning-based control, and autonomous systems.

Education

University of Washington, Seattle*Master of Science in Mechanical Engineering*

- Relevant Coursework: Nonlinear Optimal Control, Mechanical Engineering Analysis I, Intro to Control Theory

*Seattle, Washington**Sept 2025 – present***Kookmin University***Bachelor of Science in Mechanical Engineering*

- GPA: 4.04/4.50

*Seoul, South Korea**Mar 2018 – Feb 2022*

Skills

Languages: Python, C++, Rust, Bash, Java, JavaScript, SQL**Robotics:** ROS/ROS2, Mujoco, Genesis, Pinocchio, OMPL, MoveIt, Nav2**Math & ML Tools:** Gymnasium, Pytorch, Eigen, OSQP, Numpy, Scipy, Pandas**Development Tools:** Linux, Git, Docker, CMake, FastAPI, React, PostgreSQL, Ollama

Experience

Robotics Software Engineer, AI Motion Team*Plaiif**Seongnam-si, South Korea**Jan 2023 – Aug 2025*

- Designed and implemented task-space motion planners and optimal controllers for a modular robotic system in C++
- Architected and integrated motion sequence and task planning systems for various pick-and-place solutions, employing advanced manipulation skills and planning techniques to enhance efficiency and adaptability in robotic operations
- Built drivers in Python and C++ for collaborative robots, grippers, motors, sensors, and various I/O devices
- Built a simulation with identical interfaces to the real robot, enabling rapid prototyping without hardware dependency
- Developed robotics tooling, including collision detection systems, trajectory optimization, and filtering modules
- Automated demonstration collection pipelines, capturing human demonstrations and generating predefined trajectories via motion planning, enabling scalable data acquisition for policy training

Robotics Engineer Intern, Dev Team*Cheung Won SFA (CWSFA)**Seoul, South Korea**Mar 2022 – Nov 2022*

- Enhanced mobile robots' navigation using SLAM with Nav2, leading to more accurate self-driving capabilities
- Developed intuitive GUIs with Qt for seamless control and scenario management for multiple robotics systems
- Designed circuit diagrams and wrote firmware in C for the FADUINO-32TA, integrating it with ROS
- Optimized computer vision algorithms for detecting smart farm railroads, reducing CPU usage by 35%
- Designed and implemented a deep learning network for smart farm railroad detection, achieving 95% accuracy

Undergraduate Researcher, IAS Lab*University of California, Irvine**CA, USA**Dec 2019 – Feb 2020*

- Utilized Gazebo to simulate both aerial and ground robots, employing SLAM techniques to navigate through maps generated with a lidar sensor, contributing to enhanced robotic autonomy and mapping capabilities

Projects

Open Source Contributor 📄 @ Github*2023 – present*

- Contributed to open-source repos that I actively use, including Genesis, ROS, MoveIt, Hugging Face, and many more
- Developed and maintained open-source robotics libraries, CLI tools, and algorithm implementations

Speech-based Basketball Live Boxscore App 📄 @ Personal*June 2024 – Aug 2024*

- Led server design and integration of AI speech pipeline using GPT-3.5 and Whisper
- Built real-time game statistics processing and database management with FastAPI and PostgreSQL

Energy Trend Monitoring System @ Daewoong Pharmaceutical*Jan 2022 – Feb 2022*

- Identified key factors influencing energy trends using exploratory data analysis
- Implemented data pipelines and visualization tools with Python, PyTorch, Pandas, and Numpy

Capstone Design Project: Autonomous Scooter 📄 @ Kookmin University*Mar 2021 – June 2021*

- Led development of motor control software on Arduino and implemented autonomous driving using Intel RealSense D435 and Nav2 on Raspberry Pi 4