

Kayden Knapik

Robotics Engineer



About me

Hands-on TU/e Robotics student skilled in end-to-end robot development. Proven ability to design, build, and deploy reinforcement learning policies for complex robots using Isaac Sim & Lab.

Contact

- Kayden Knapik
 Kayden Knapik
 kaydenknapik@gmail.com

Skills

Programming:
Python, C++, PyTorch

Robotics & AI:
Isaac Sim, Isaac Lab, mujlabv,
RL, ROS2

Software & Tools:
CAD, Git, Linux, Blender

Hardware:
3D Printing, Jetson , Raspberry Pi, Sensor Integration, QDD
Actuators

Honors & Awards

Tech United Student Team:
2024 World Champion,
RoboCup MSL Eindhoven
2023 World Champion,
RoboCup MSL Bordeaux

First Tech Challenge
2022 First Place, Island
Robotics Tournament

2021 First Place, Island
Robotics Tournament

Languages

English:
Native Proficiency

Dutch:
Intermediate (B1)

Interests

Walking Robots,
Reinforcement Learning
Ice Hockey

PROJECTS

2025	Reinforcement Learning for Bipedal Locomotion BACHELOR'S END PROJECT (BEP) · TU Eindhoven
	<ul style="list-style-type: none">Built a bipedal robot using 3D printing and affordable hardware inspired by Disney's BDX robot.Developed a RL policy in Isaac Lab to achieve stable standing.Bridged the sim-to-real gap by deploying the trained standing policy on the physical robot.Awarded a 9/10 <p>Technologies used: Isaac Sim, Isaac Lab, Python, PyTorch, Reinforcement Learning, 3D Printing</p>
2024	Low-Cost MSL RoboCup Platform CONTRIBUTION TO TECH UNITED · TU Eindhoven
	<ul style="list-style-type: none">Designed and engineered an open-source, omni-wheeled robot platform for under €1000.Created to lower the barrier of entry for new teams into the RoboCup Middle Size League (MSL).Managed the full development cycle: from CAD design to assembly and programming. <p>Technologies used: CAD, 3D Printing, Python, VESC, Raspberry Pi, Inverse Kinematics.</p>
2023	Smart Foldable Bicycle Helmet (Helmit) ENGINEERING DESIGN GROUP PROJECT · TU Eindhoven
	<ul style="list-style-type: none">Engineered the 3D CAD model for a smart bike helmet, folds to 50% of its original size.3D Printed & Assembled the designLed the design and integration of electronicsCreated product visualizations and animations in Blender for project presentations. <p>Technologies used: CAD, 3D Printing, Blender, Microcontrollers.</p>

EDUCATION

2025-PRESENT	Masters Mechanical Engineering - Robotics TECHNICAL UNIVERSITY EINDHOVEN · Eindhoven, Netherlands Projected Relevant Coursework: Control Engineering, Software Engineering for AI, System Theory for Control, Multibody and Non-Linear Dynamics, Robot Motion Planning & Control, Optimal Control & Reinforcement Learning, Mobile Robot Control, Machine Learning for Systems & Control
2022-2025	Bachelor Mechanical Engineering TECHNICAL UNIVERSITY EINDHOVEN · Eindhoven, Netherlands Relevant Coursework: Dynamics & Control, Mechatronic Design, Multiped Robot, Autonomous Vehicles, Engineering Challenge for Venus, Robot-arm, Dynamics & Control of Robotic Systems
2020-2022	International Baccalaureate CAYMAN INTERNATIONAL SCHOOL · Cayman Islands Higher Level Courses: Physics, Math, Geography

EXPERIENCE

2025	Social Media Manager TU/E ROBOTICS DEPARTMENT · Eindhoven, Netherlands Managing the official LinkedIn page, creating content to promote departmental research and student projects.
2021	Robotics Intern CYBERDYNE ROBOTICS, BROOKS REHAB · Florida, USA Assisted therapists with the setup and operation of HAL exoskeletons for patient rehabilitation.

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