

MACROACT

Make Robots Active & Smart

Macroact is an AI and Robotics startup that designs and develops smart robots for the home. The main focus lies on autonomous control optimization and self-learning robots via AI implementation throughout the whole robot development process.

Our goal is to become a leader in robot innovation technology and to support, inspire and empower people with our work.

- 01 Passionate about Robotics & AI
- 02 Create Accessible & Innovative Products
- 03 Transform Human-Robot-Relationship
- 04 Enrich People's Lives

Follow us



Maicat 's Website maicat.ai
Macroact E-mail support@macroact.com

Visit macroact.com

and sign up to our mailinglist for updates & news or follow us on social media [@macroact](https://twitter.com/macroact)

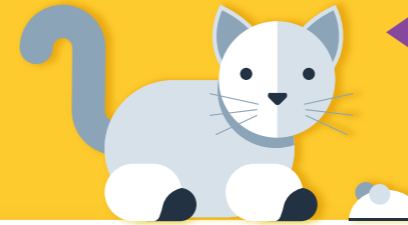
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The cutest way to combine AI & Robotics



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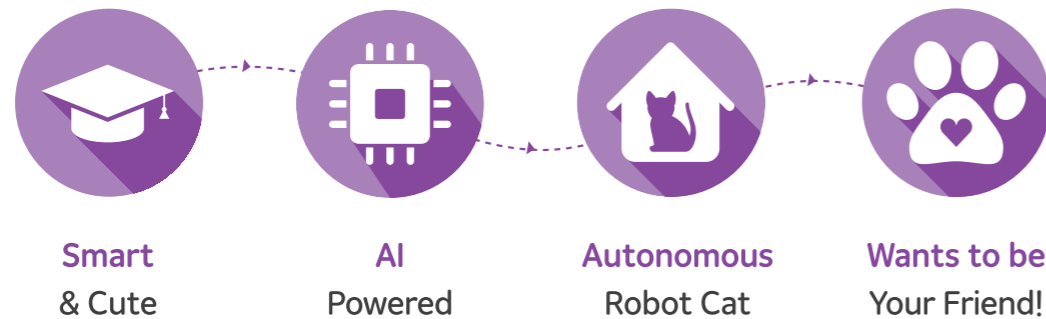
The cutest way to combine AI & Robotics



Created for all those interested in innovative technology and ready to embrace new ideas into their life!

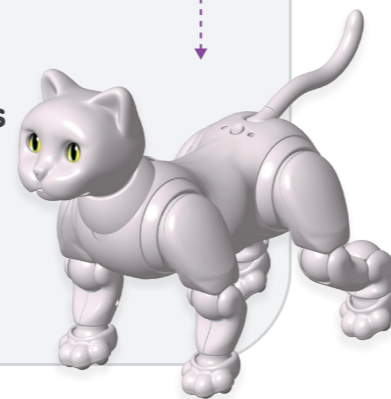
Who is Maicat?

Ever wanted to take care of a pet but a **busy schedule**, **limited resources**, **space** or **health issues** got in the way?



Interactive Companion

Cutting-edge technology makes interacting with Maicat a fun and engaging experience. Maicat learns through experiences and its active and passive sensors help in understanding the direct environment. With your help and affection Maicat will soon adapt to its new home, becoming a part of the family.



A part of your family



A companion for your pet

01 Emotion & Personality

Maicat senses your emotions and reacts to your mood. The way you interact with Maicat influences its personality over time.

02 Family & Friend

Maicat is able to recognize different faces and rates them according to their behavior. However, you will always be prioritized as its closest friend and primary caregiver!

03 Always there for you

Coming home from an exhausting day at work, feeling lonely, being bored or just looking for some company? Maicat is **always there for you and might cheer you up with a friendly greeting!** Maicat is happy to be around its favorite person and loves getting your attention!

maicat™ Technology

Smart Tech in a Small & Cute Design



Adaptive pet robot
powered by AI

Microcomputer with
hierarchical intelligence system

Trained via reinforcement learning:
basic movement, incl. walking → Actuator control

Face-, Voice-, Emotion-Recognition
through camera & microphone



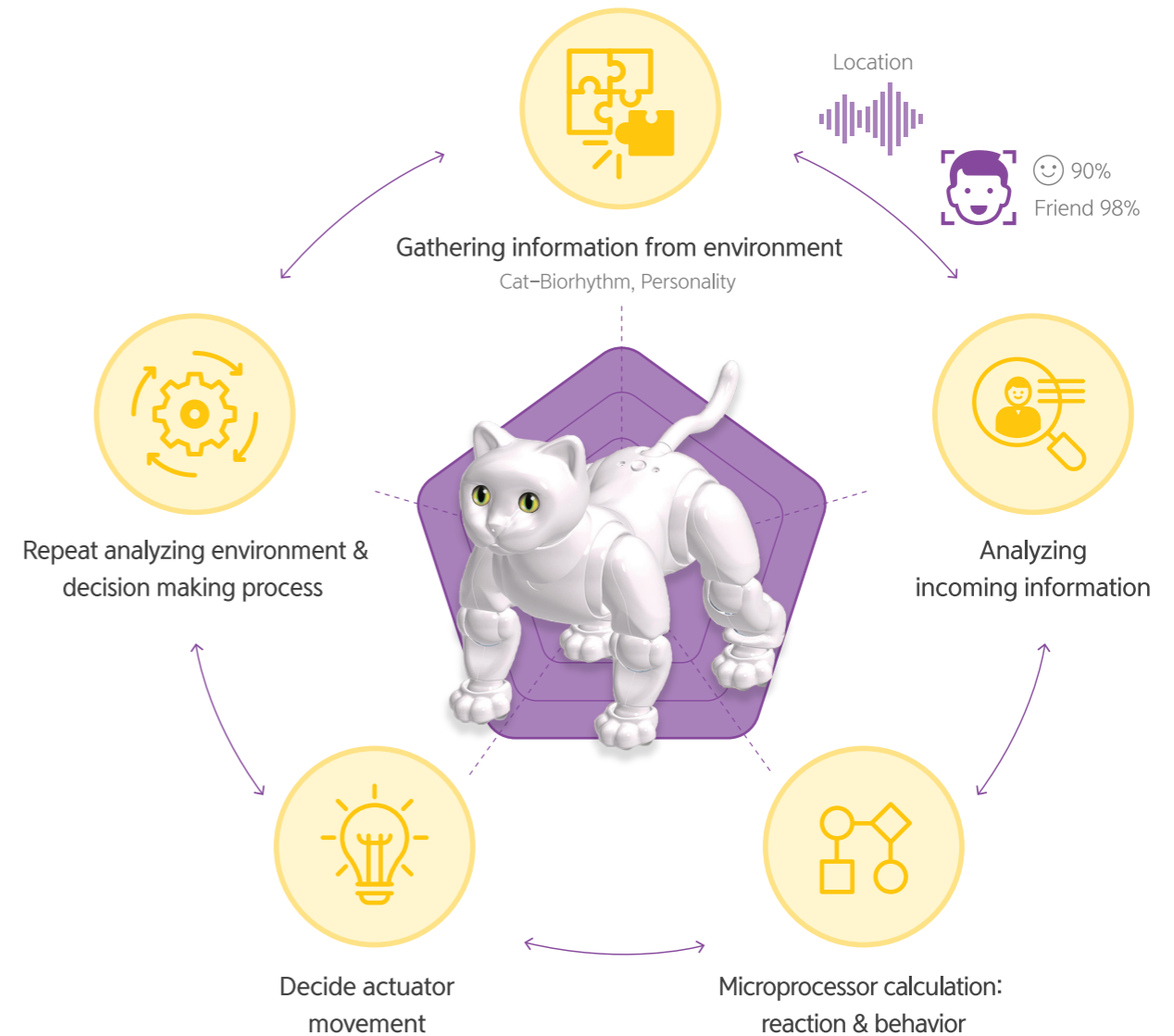
Autonomous learning

Instead of pre-programming, Maicat figures out how to walk, master basic movements, and gain control over its actuators via reinforcement learning. This approach makes Maicat **adapt to different environments and reacts differently in various situations.**

Layered Intelligence System

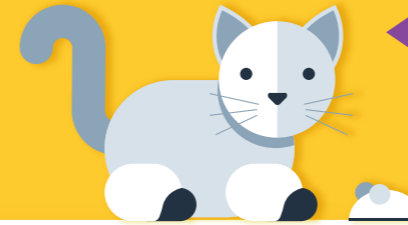
Maicat gathers information through camera, sensors and speaker to understand its surroundings, detect the source of sound and to analyze the situation based on an emotional intelligence algorithm. The layered intelligence system helps to determine how to react on different functional levels.

What is driving Maicat?



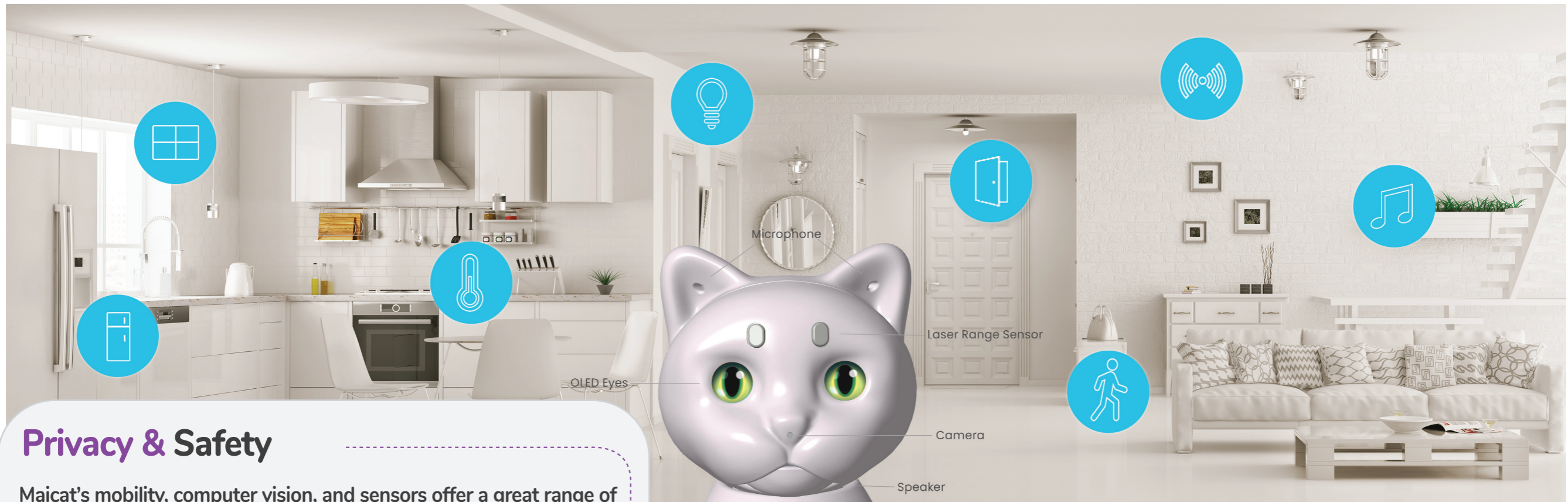
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Center of the Smart Home



Mobility, active & passive sensors making this AI powered robot a one-of-a-kind experience!

Easy Smart Home Integration



Privacy & Safety

Maicat's mobility, computer vision, and sensors offer a great range of possibilities to connect with the smart home and to perform different functions. Users get instant access to monitor their home, while Bluetooth and optional internet connection let the consumer conveniently manage different features and give them full control over their data, making privacy an essential part of the robot's design.

- 01 Understand Environment
- 02 Smart Navigation & Operation
- 03 Privacy & Control
- 04 SDK & APP-Store

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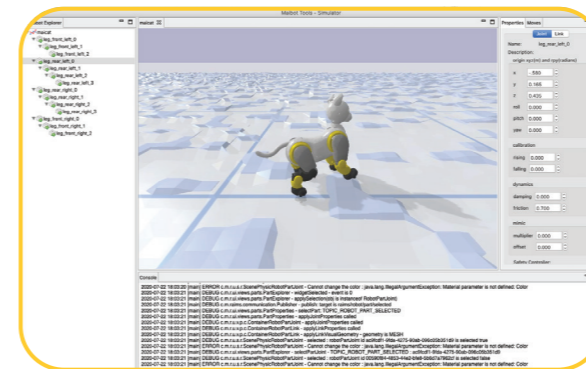
Smart Tech in a Small & Cute Design



Features & Specifications

Dimensions	20cm(l) x 13cm(w) x 20cm(h)
Weight	1 KG
Battery	Lithium (self-charging)
Display	OLED eyes
Micro Computer	Quard-Core CPU
Camera	1
Sound	Speaker, Microphone
Actuator	20
Sensor	9
Material	ABS, Glass, Silicon
Connectivity	Bluetooth, WIFI

Maitools & Maicloud



Maitools

The Maitools simulator allows you to define robots, environments and tasks. The entered data is transferred to the cloud and converted into training data. While training takes place in the cloud you can watch the learning process in the simulator.

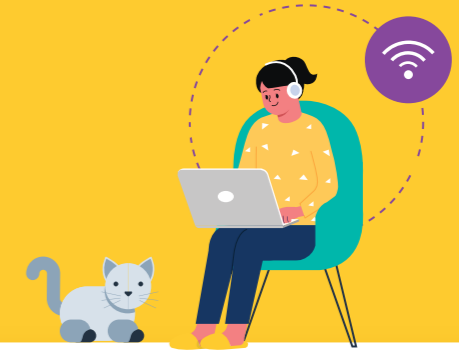


Maicloud

In the Maicloud the simulated robot learns the optimal control method for the specified task. The trained model is published so that it can be applied via API, ROS package and data to the real robot.

maicat™ Research

Reinforcement Learning + Animal Pose Estimation

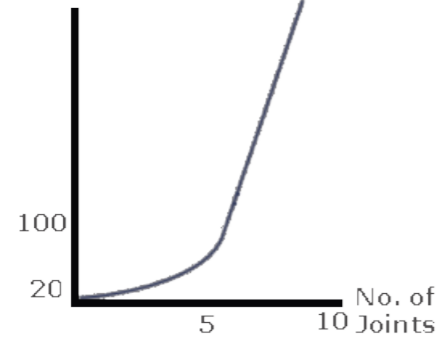


AI Data Processing

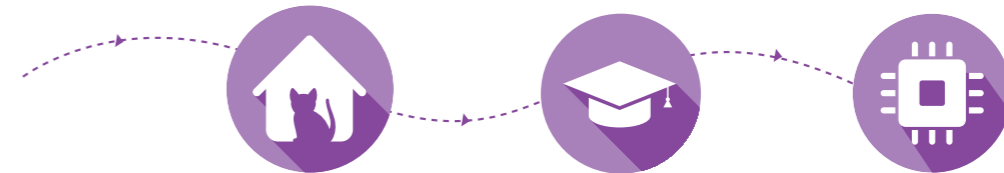
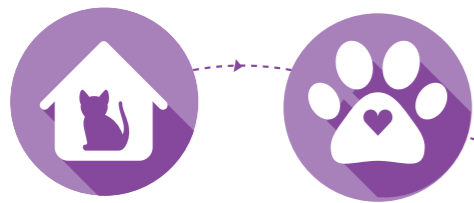
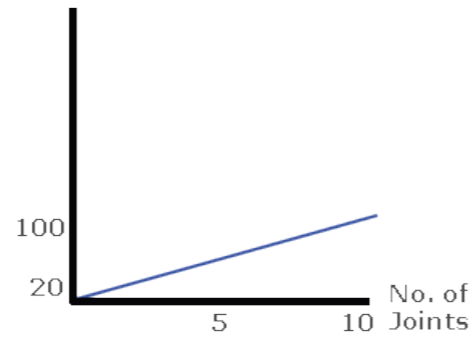
- Collection of 600 videos of 12 specific cat behaviors
- Collection of 24,000 image frames
- Processing each image keypoint annotation

Improvement of learning speed of indirectly connected joint control

Learning Time



Learning Time



 **99% accuracy** based on joint inference PCKh @ 0.5

 **Grand Prize Winner, AI Test-Bed Korea**

