BOULAICH MARWA, CHARLIER BARTHÉLÉMY, DAVESNE GABIN, ESSALEHI MARWA

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Sophia Antipolis

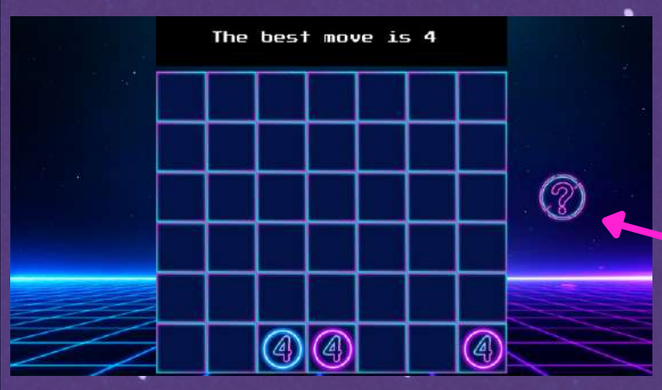
Graduate school and research center in digital science

4 THE WIN

ONLINE USER EXPERIENCE AND GAMING INTERFACE

CAMPAIGN MENU

The user will have the possibility of choosing among **four levels** of difficulty



When playing against the AI, a **"Help" button is available** and if pressed the best move possible will be computed and printed out

COLLECT THEM ALL !

The use of the help button is tracked. The user will be **rewarded with stars** if she or he wins.

- **Three stars** if he defeats the AI **without any help**
- **Two stars** if **only one help** is requested
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ONLINE MENU

SEND REQUEST

Functionalities:

- Display the list of players present on the network using bluetooth discovery
- Send a game invitation to a players on the network
- Refresh to update the list

INVITE RECEIVED

Functionalities:

- Receive invitations from other groups to play against their AI or against a player
- Accept or refuse invitations. Refusing an invitation, sends it automatically to the other user and goes back to listening mode to receive other invitations

ALPHAGO ZERO

Play against the AlphaGo Zero algorithm, the first method that managed to beat the Go wolrd champion in 2016, but well-tuned to be now unbeatable at connect-4.

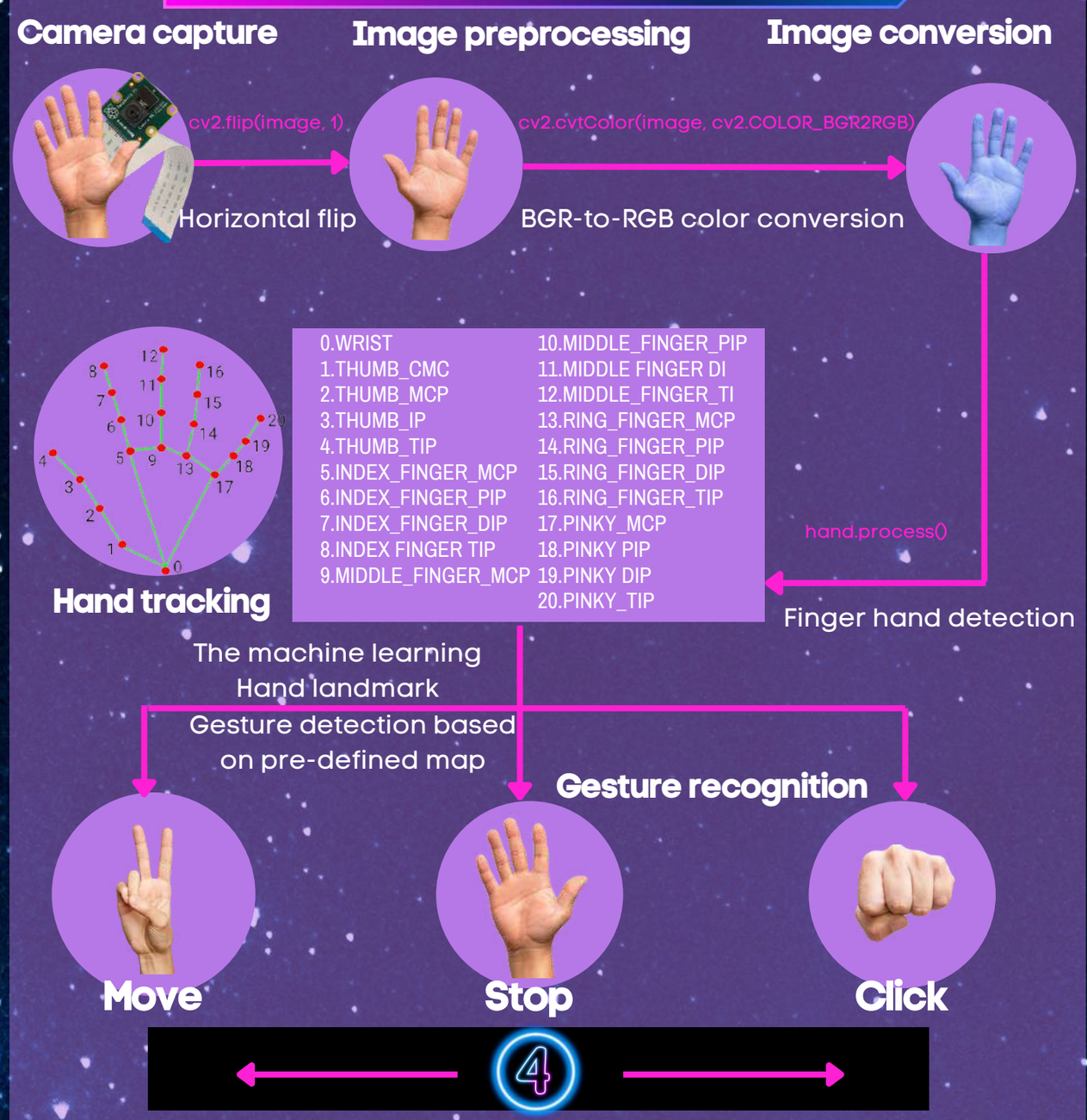
- Is trained by self-play reinforcement learning
- It combines a **neural network** and **Monte-Carlo Tree Search** in an elegant policy iteration framework to acheive stable learning

- Two clone model play using their NN's weight while a learning model sharpens his policy by gathering data from slef-play, and every 100 games is tested, the training on a GPU took 3.13 days and covered roughly 3700 games

WHY CHOOSE ALPHAGO ZERO ;

- **Plays instantly** (way faster than any Minimax), doesn't need to compute an enormous amount of games in advance
- **Highly powerfull,** wins 95 games out of 100 against a basic Minimax algorithm
- A training that provides **20 different models** and thus a possibility to implement a level system

HAND RECOGNITION
PLAY IN AN IMMERSIVE ENVIRONMENT



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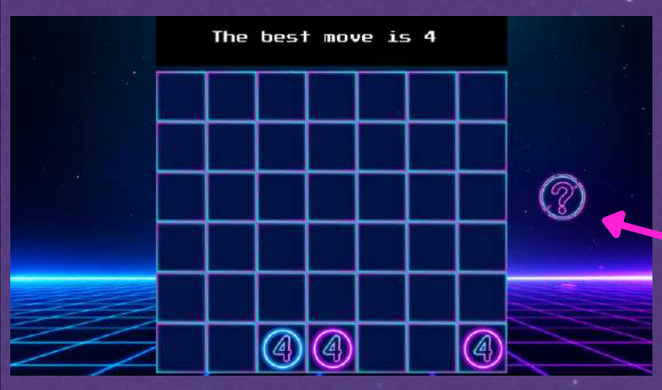

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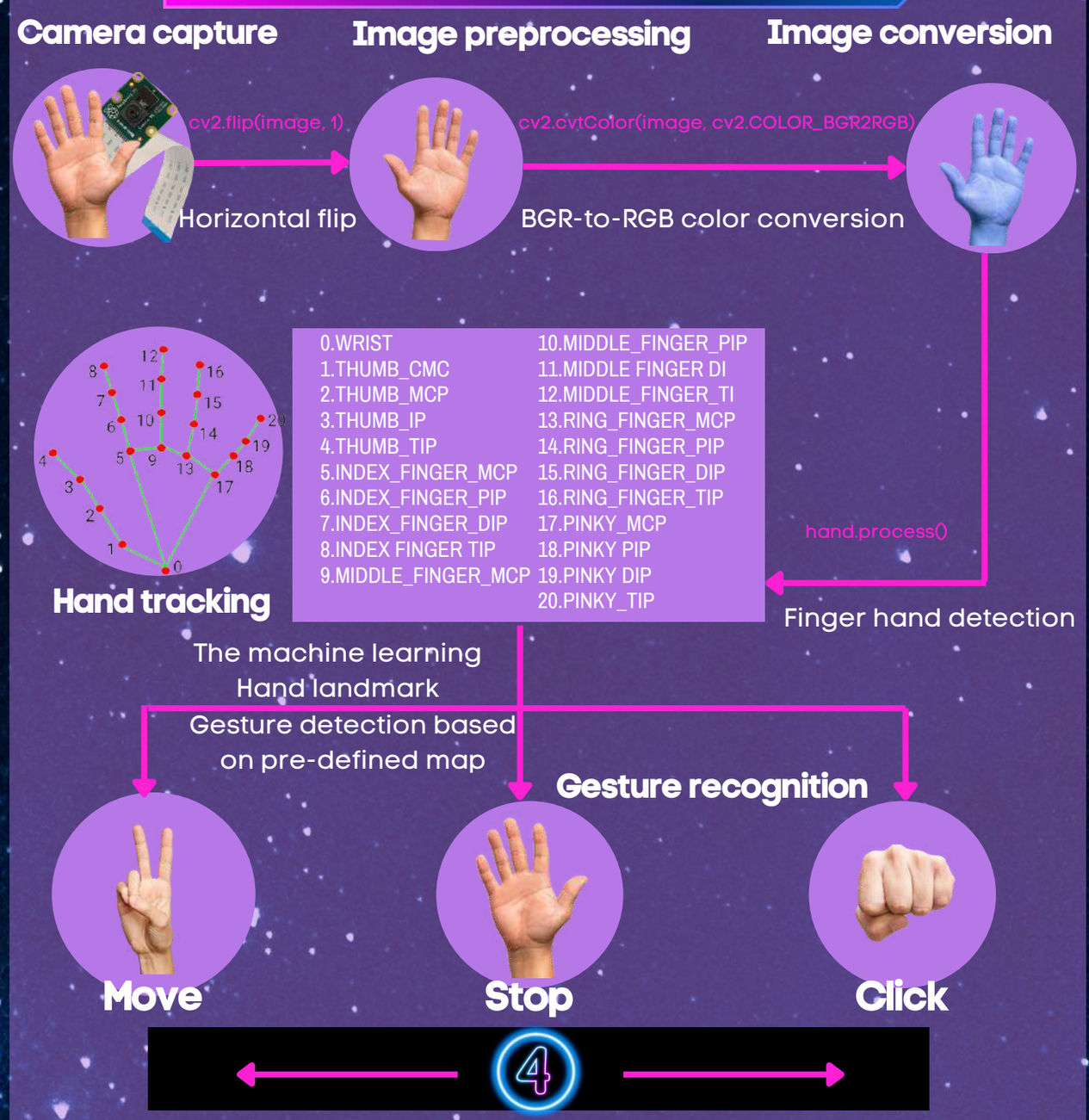

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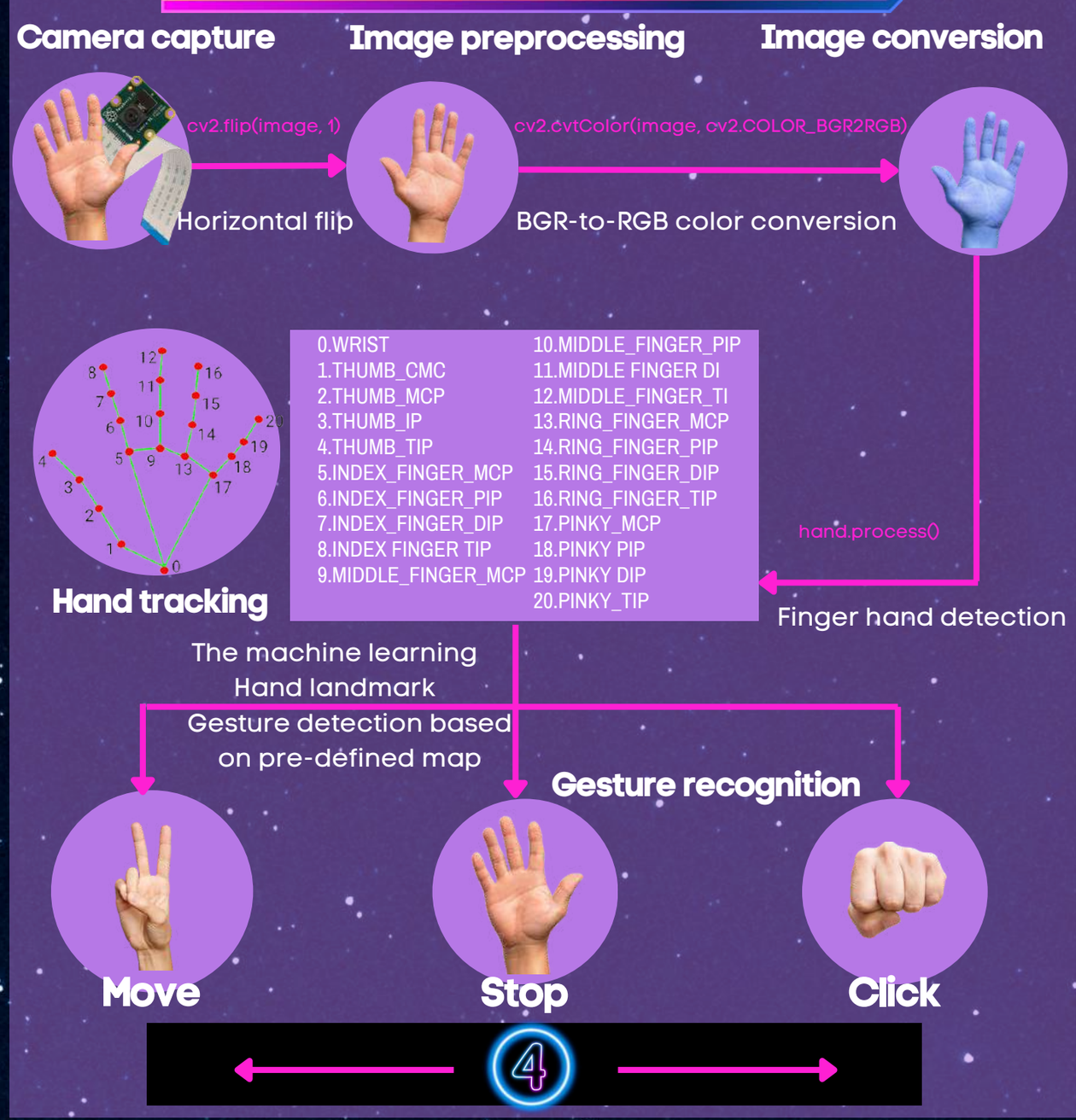

ONLINE USER EXPERIENCE AND GAMING INTERFACE

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A UNIQUE EXPERIENCE WITH THE BEST AI TOOL

CAMPAIGN MENU

The user will have the possibility of choosing among **four levels of difficulty** with different generation of the AI

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ONLINE EXPERIENCE

ONLINE MENU

An experience online with **two modes** :

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Functionalities:

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