PROTOTYPING WAYS TO PROTOTYPE AI

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PROTOTYPING
WAYS TO
PROTOTYPE AI

PEOPLE'S PERCEPTION	REALITY
Alive	Not Alive
Attitude & Personality	Configured
Intelligent	Dumb
Authoritative	Just one POV
Ethics & Values	Rules & Biases
Broad Capabilities	Very Limited Capabilities
Can be gamed	Doesn't know it's being gamed

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NEW INTERACTIONS FOR COLLABORATION

To move beyond automation that merely replaces human tasks, we have to design new interactions and ecologies that enhance human creativity, labor, learning, and collaboration.

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BEHAVIORAL, INTERACTIVE FICTIONS

To shape these ecologies, we design behavioral, interactive fictions of intelligence that **honestly** embody the goals, character, affordances, intentions and **limits** of complex “AI” systems.

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WHAT IS BEING DESIGNED?

Personality/character/autonomy
Training/pruning/tending/learning
POV & Biases
Social interactions - M2M, M2H
Intentions/goals
Ethics/civic responsibility

Honest smartness

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PERSONALITY DESIGN

PROTOTYPING WAYS TO PROTOTYPE AI

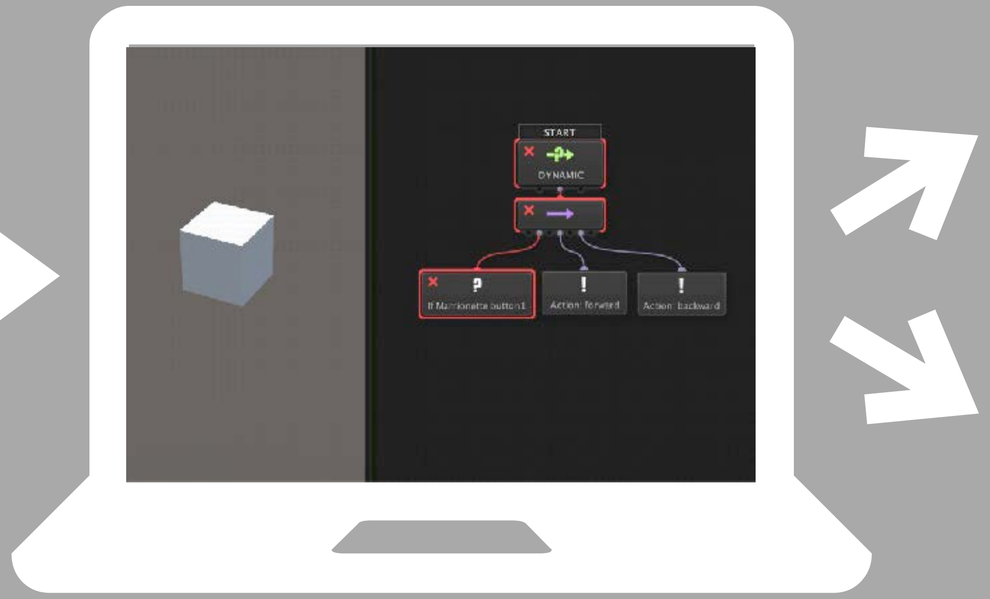
ANIMISTIC DESIGN: RETHINK IXD

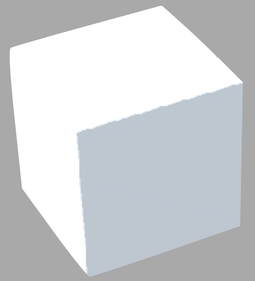
We envision collections of autonomous, unpredictable devices with distinct personalities and interests, interacting with people and each other. Together they form a creative context.

Rethink IxD - medium.com/@philvanallen/

DELFT TOOLKIT

AR/VR Simulation





Remotely Marionette & Simulate AI

Designer can remotely adjust and simulate AI behaviors in real time, while observing users

Visual Behavior Authoring

Visually author behavior logic and personality in Unity, supported by external Machine Learning

Working Prototype

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A SYSTEM FOR SKETCHING IN AI

Simplifies working with AI technologies
Visual authoring of subtle behaviors
Supports fast, iterative methods
Will include learning examples

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WIZARD OF OZ TO REAL

Simulate & marionette smart behavior
Transition to “real” smartness

Simulate embodied systems in AR/VR
Transition to “real” embodiment

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SUPPORT FOR AI

- Machine learning
  - Static and time-based inputs
  - Classification and regression
  - Training with user input & datasets
- Behavior trees
- Utility Theory
- Simple logic

DELFT TOOLKIT IN ACTION

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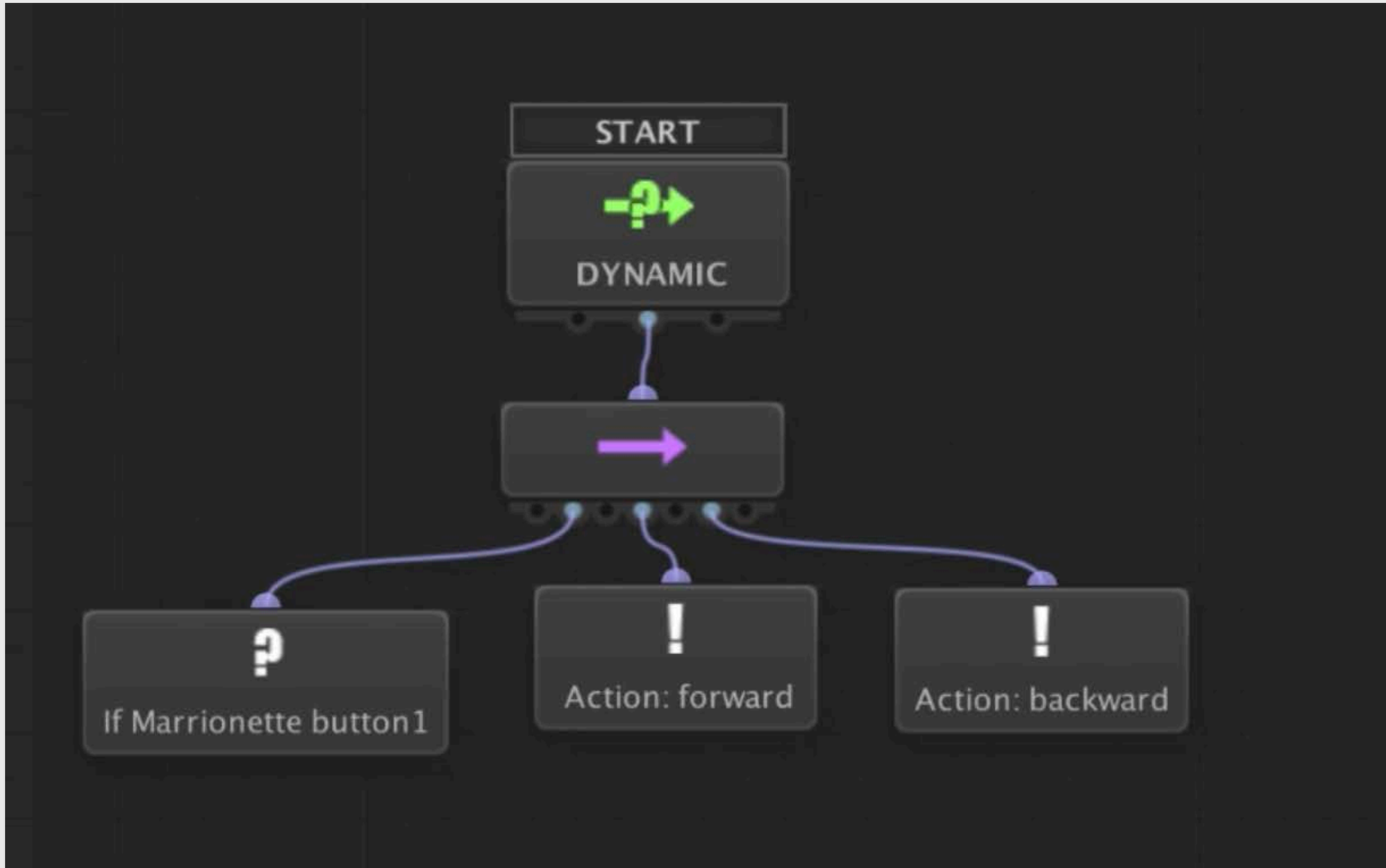
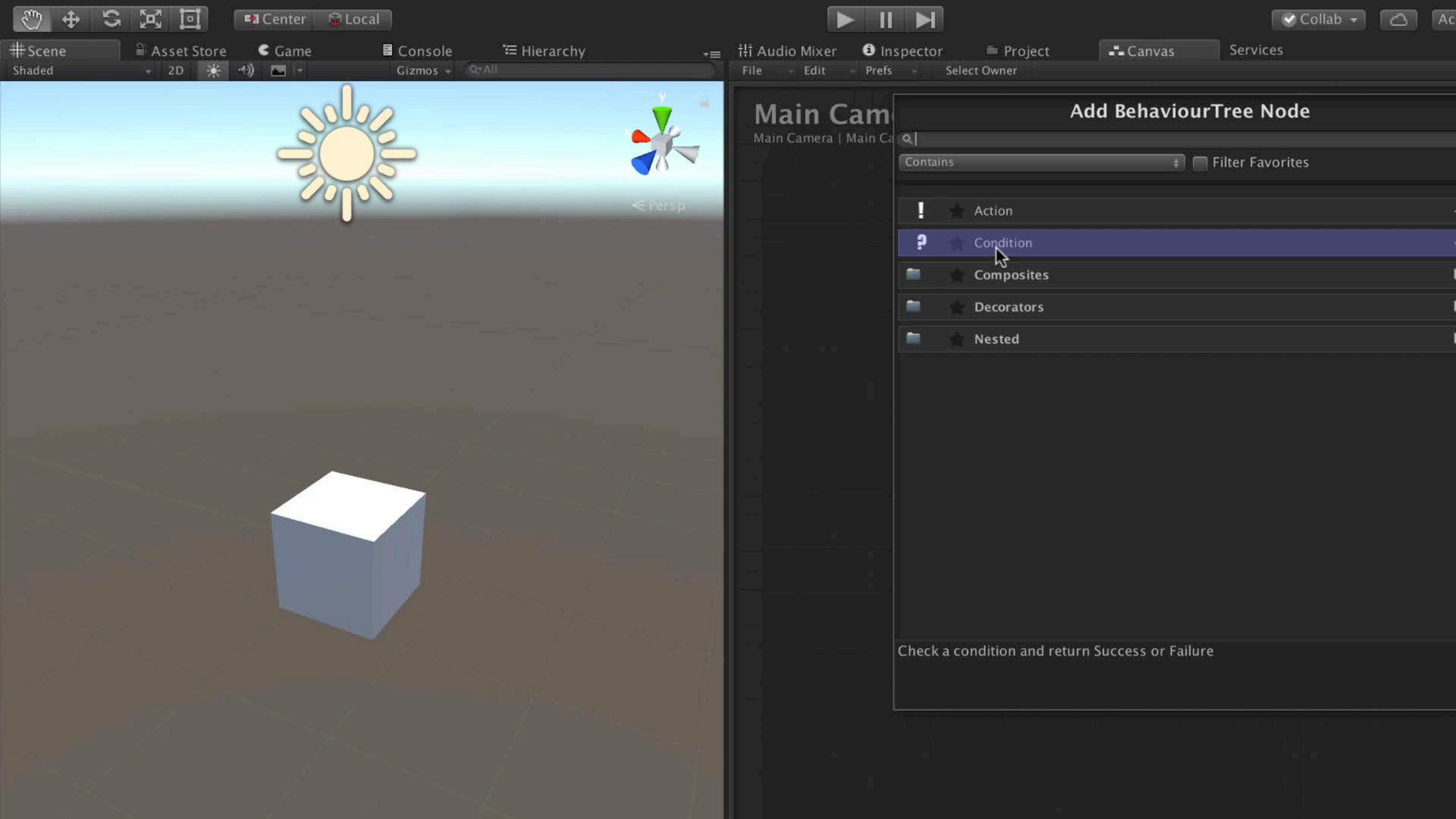
BEHAVIOR TREES




Center
Local
Collab
Scene
Asset Store
Game
Console
Hierarchy
Audio Mixer
Inspector
Project
Canvas
Services
Shaded
2D
Gizmos
All
File
Edit
Prefs
Select Owner
Persp
Main Cam
Main Camera | Main Ca
Add BehaviourTree Node
Contains
Filter Favorites
Action
Condition
Composites
Decorators
Nested
Check a condition and return Success or Failure

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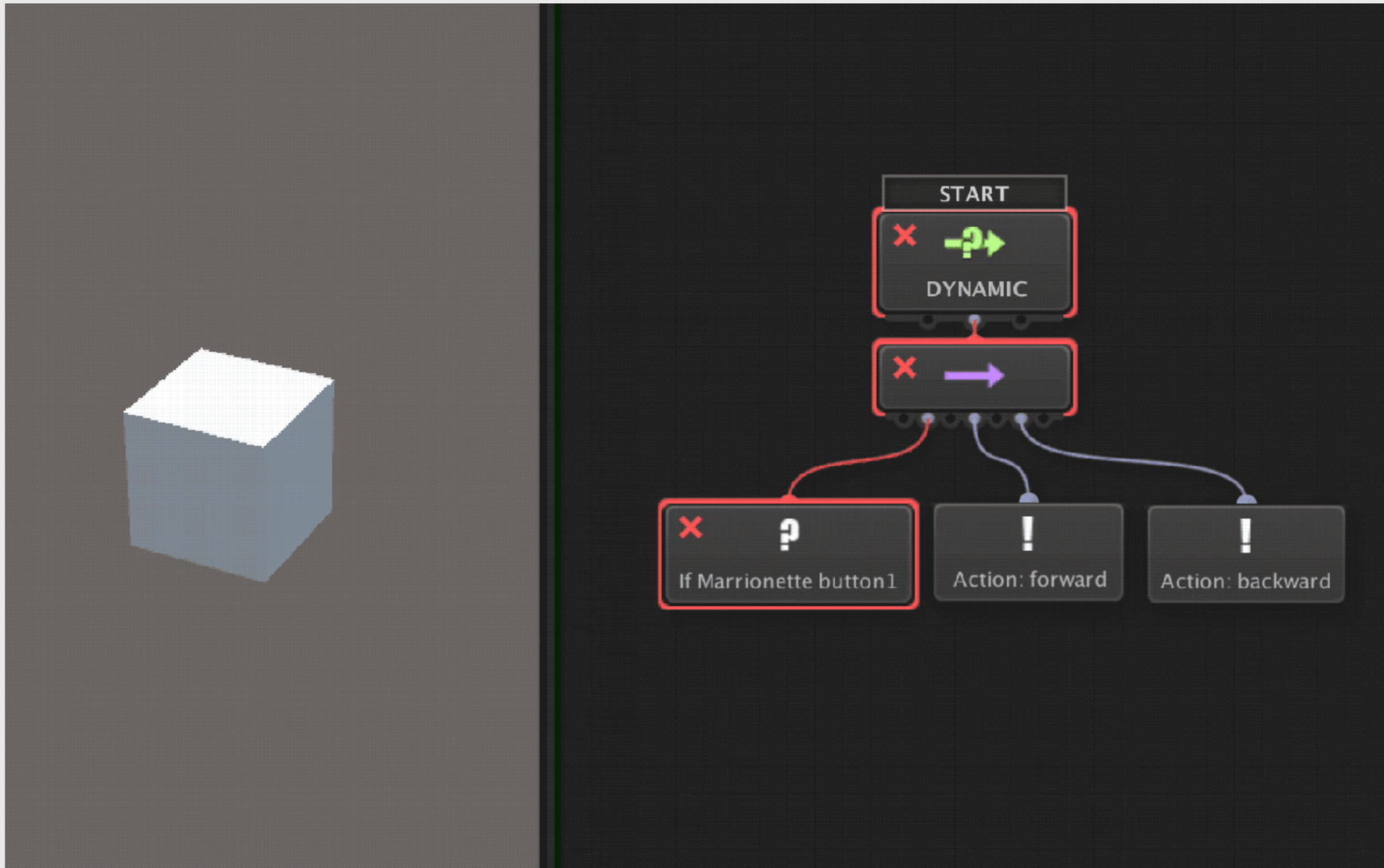
3D SIMULATION




Main Camera BehaviourTree (Bound)
Variables
Add Variable
START
DYNAMIC
Action: forward
Action: backward
MacBook Pro

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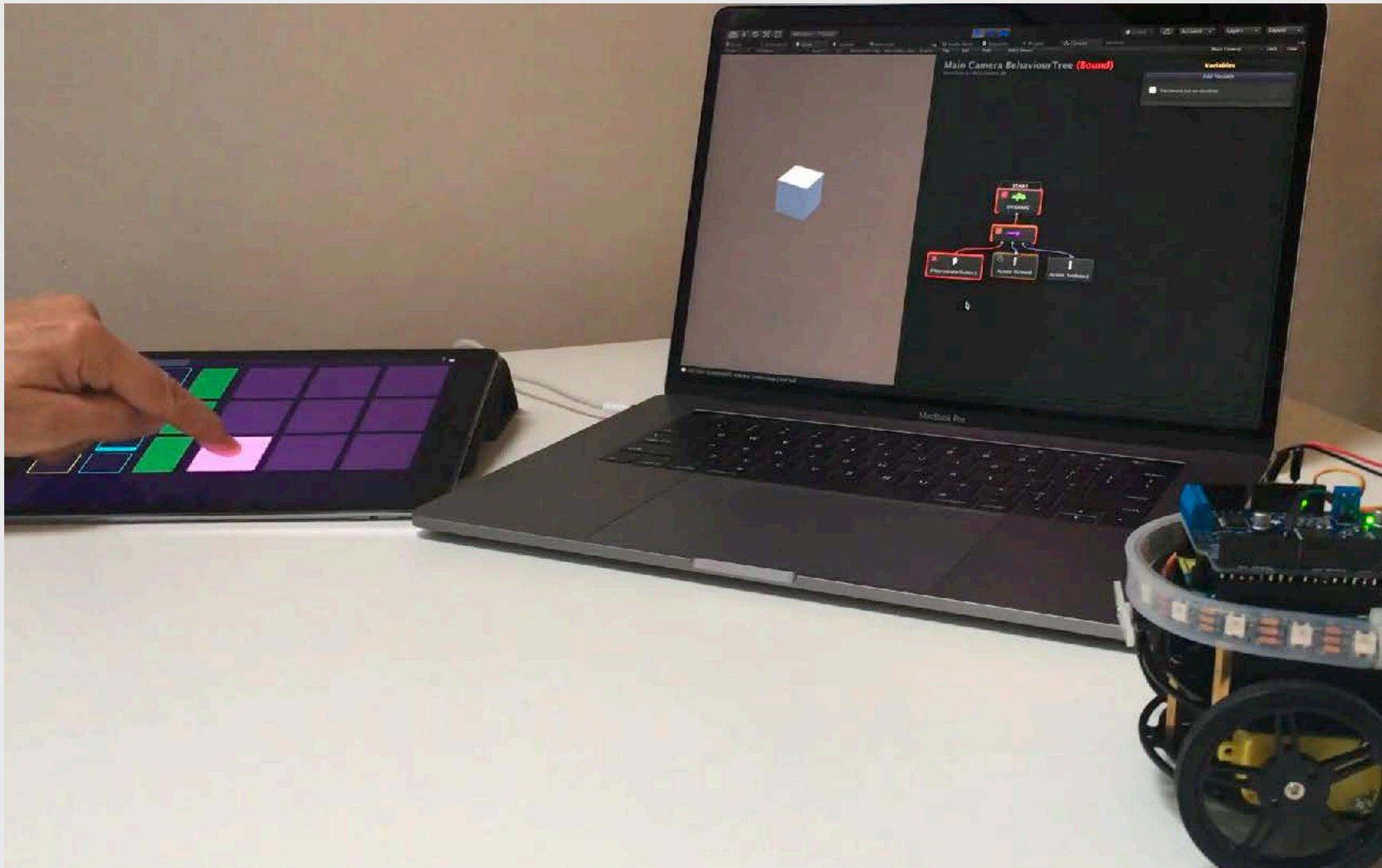
MARIONETTE + EMBODIED DING




Main Camera BehaviourTree (Bound)
Variables
Add Variable
START
DYNAMIC
Action_forward
Action_backward
MacBook Pro

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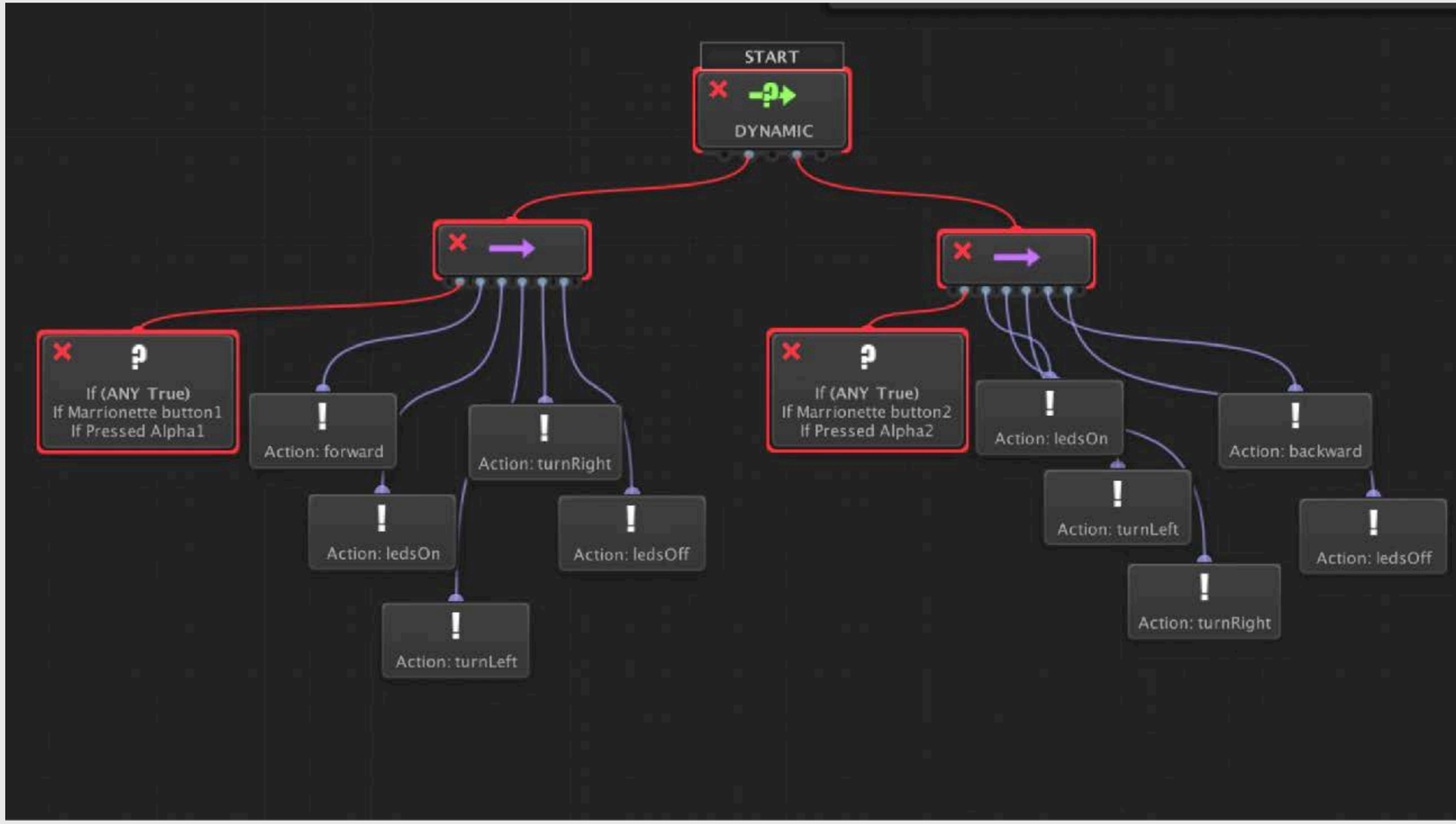
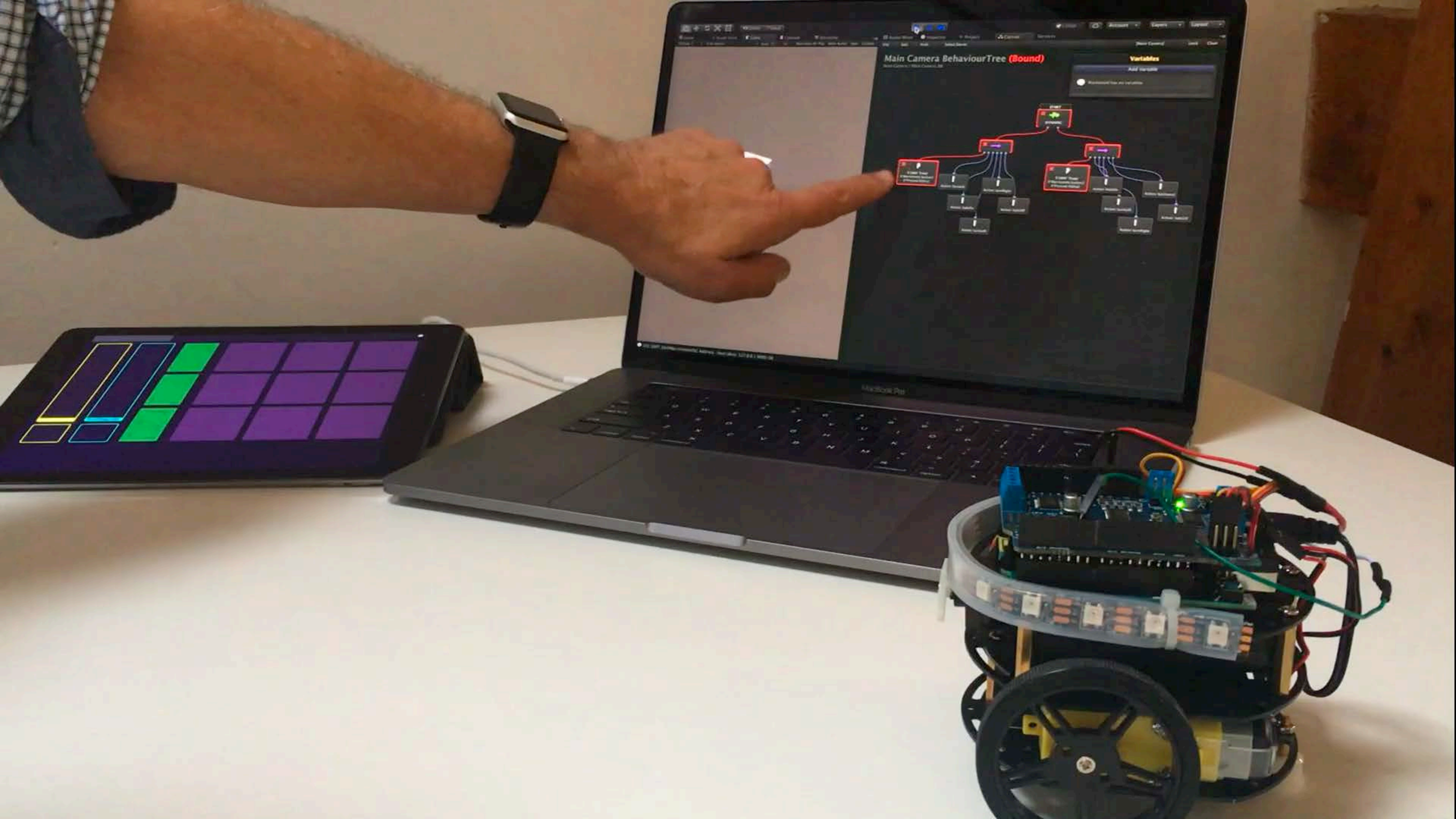
MARIONETTE + EMBODIED DING




Main Camera BehaviourTree (Bound)
Variables
Add Variable

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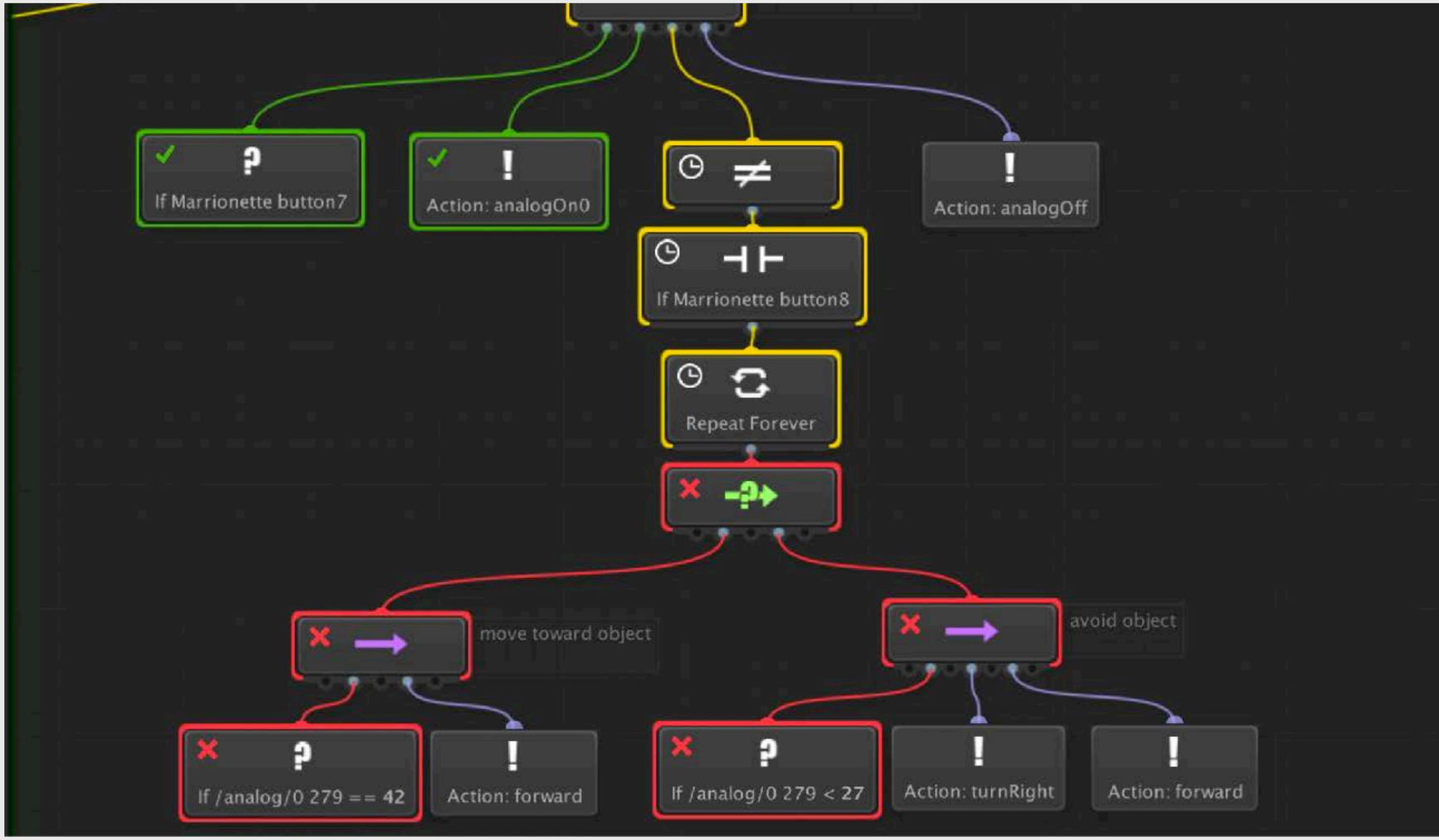
EMBODIED RESPONSIVENESS




Main Camera BehaviourTree (Bound)
Variables
Add Variable
If Marrionette button7
Action: analogOn0
Action: analogOff
If Marrionette button8
Repeat Forever
If /analog/0 29 == 42
Action: forward
If /analog/0 29 < 27
Action: turnRight
Action: forward

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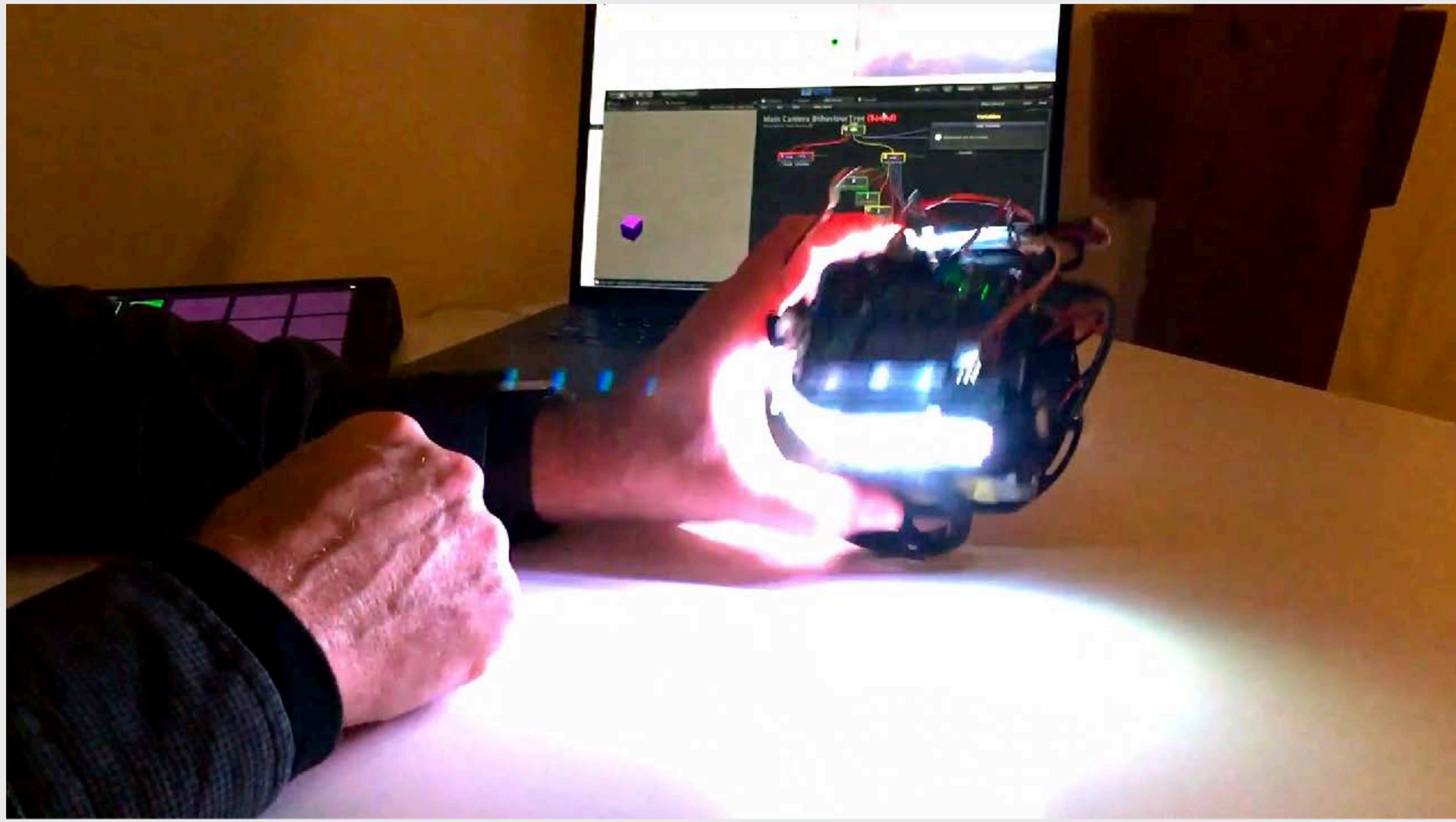
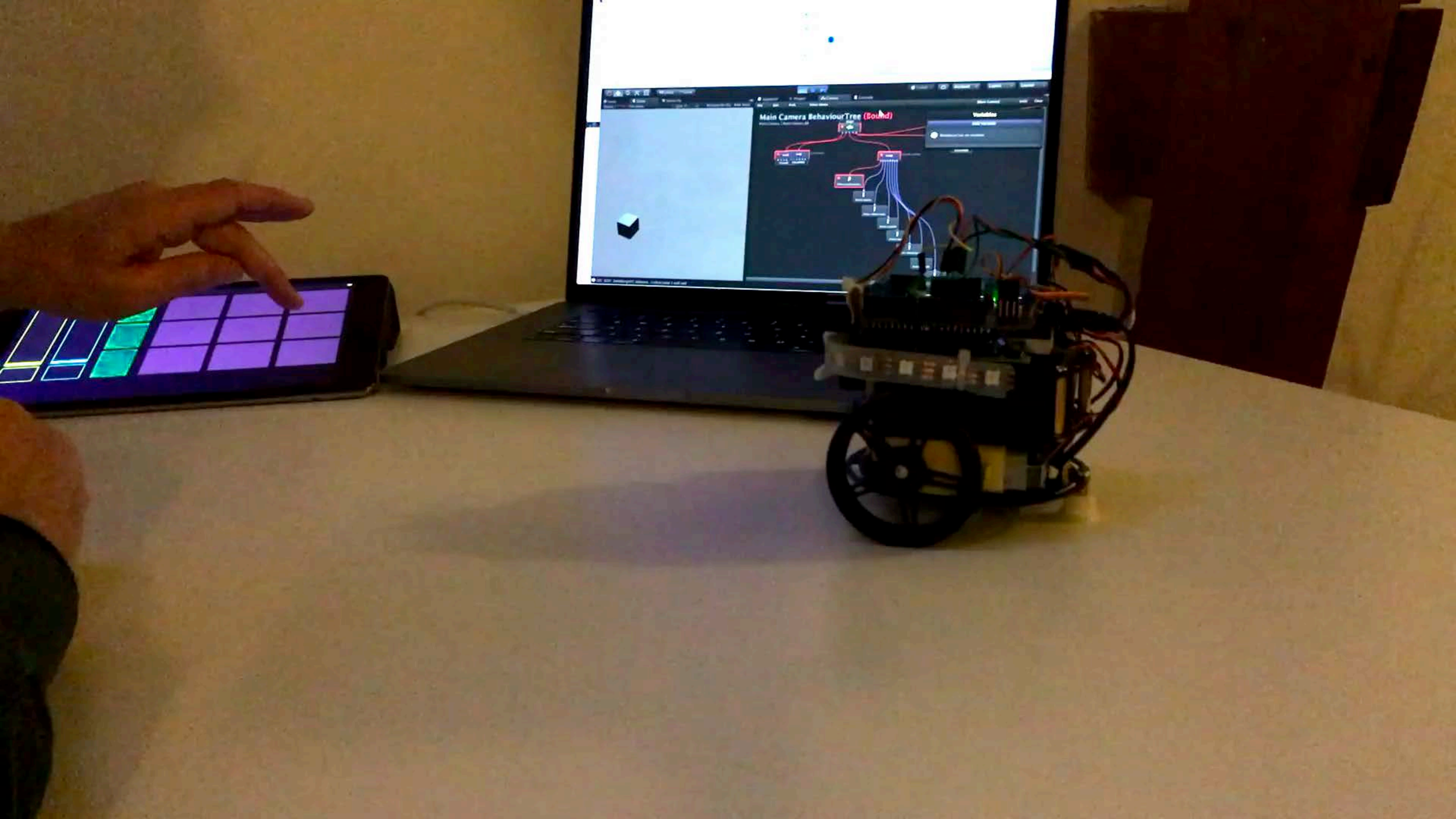
MACHINE LEARNING - TRAINING




Main Camera BehaviourTree (Bound)

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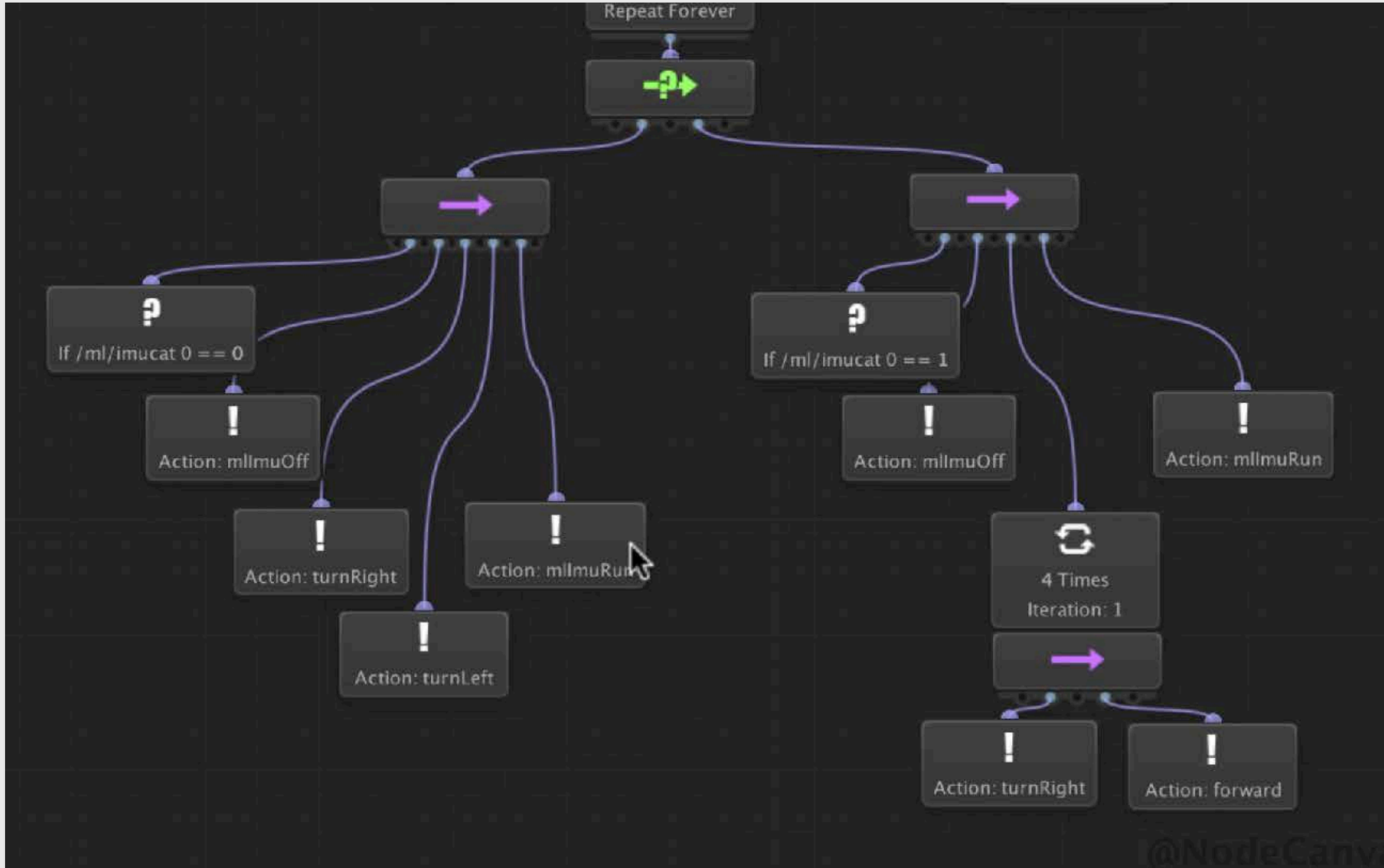
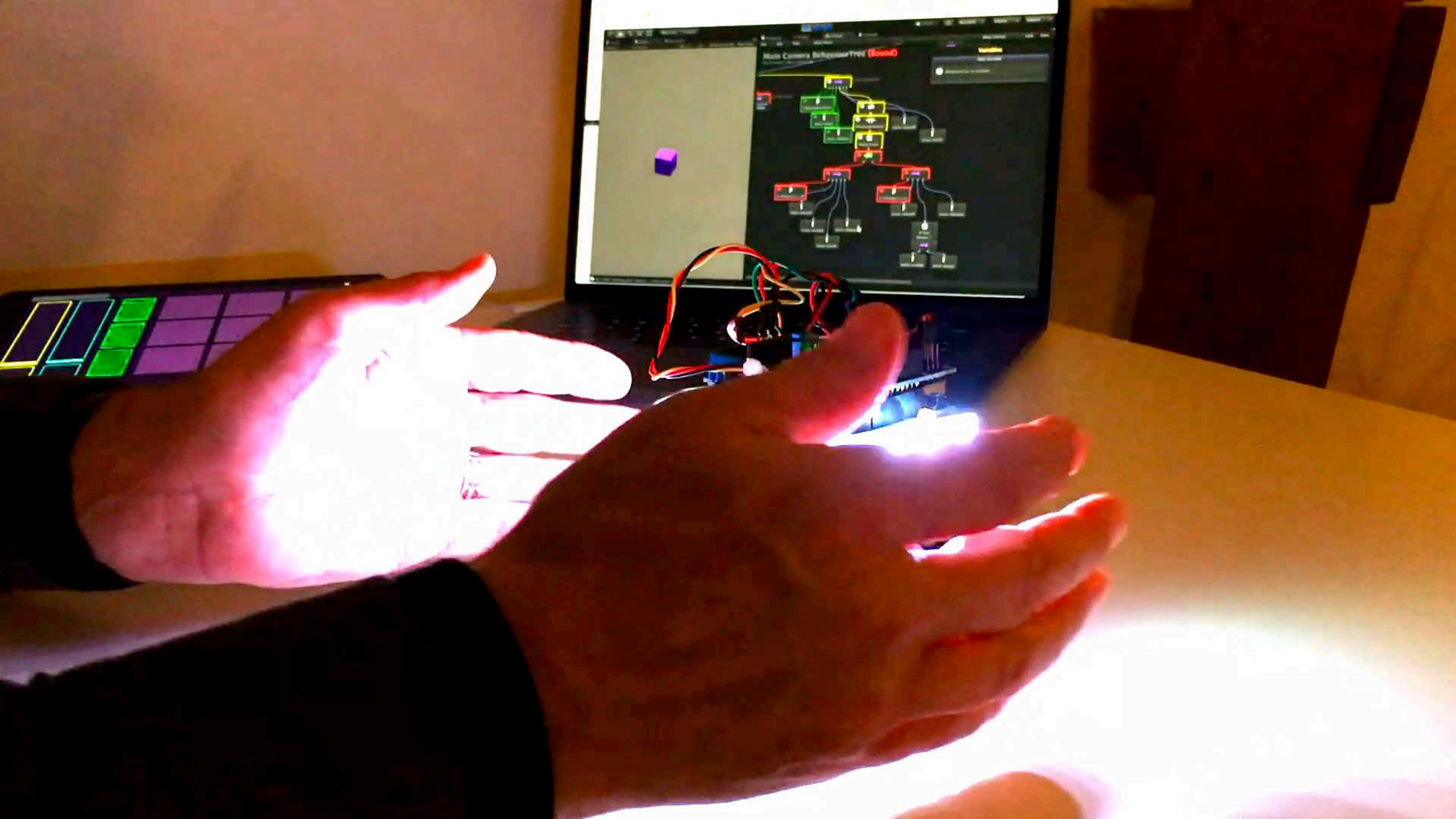
MACHINE LEARNING - CLASSIFYING





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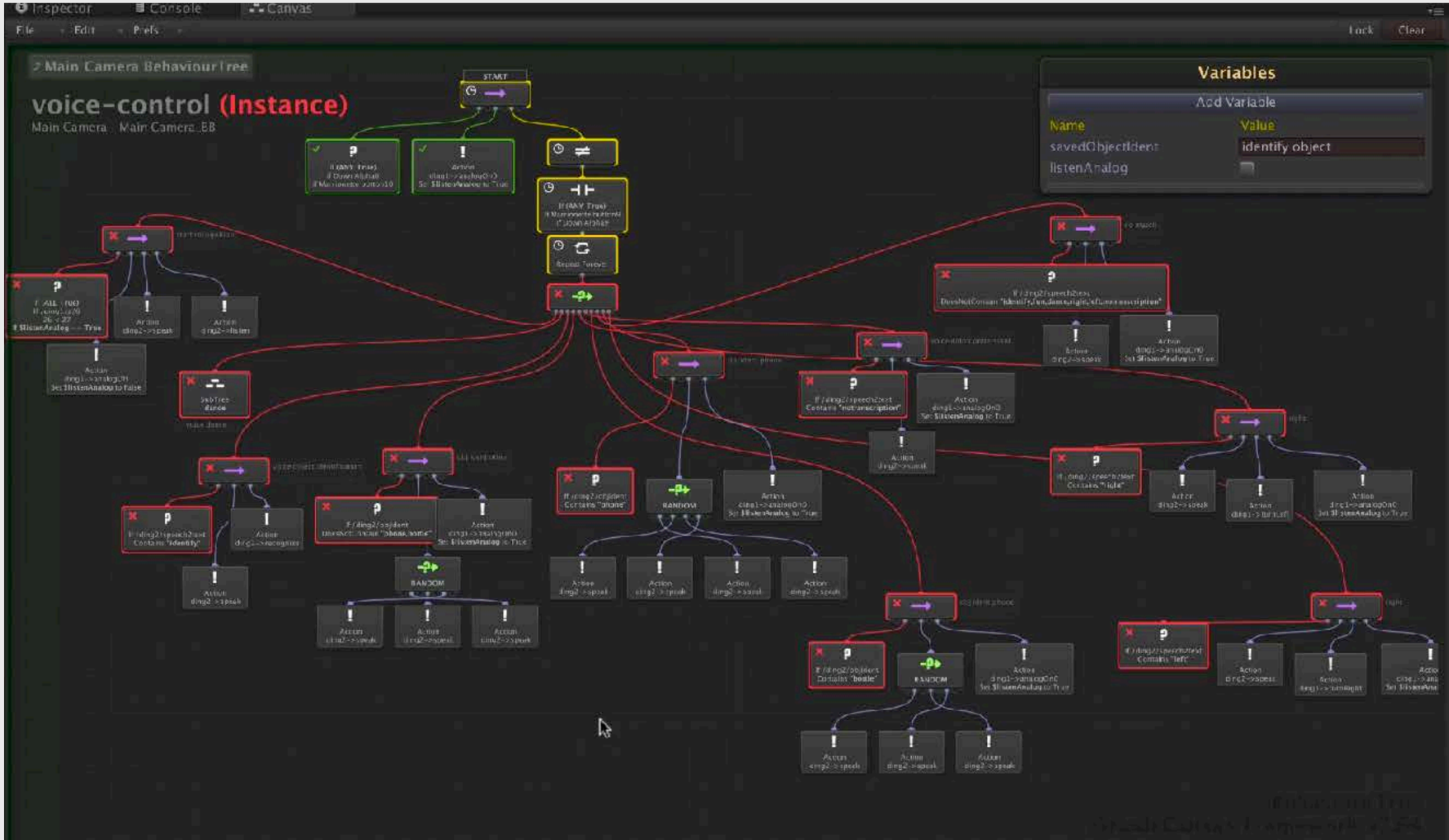
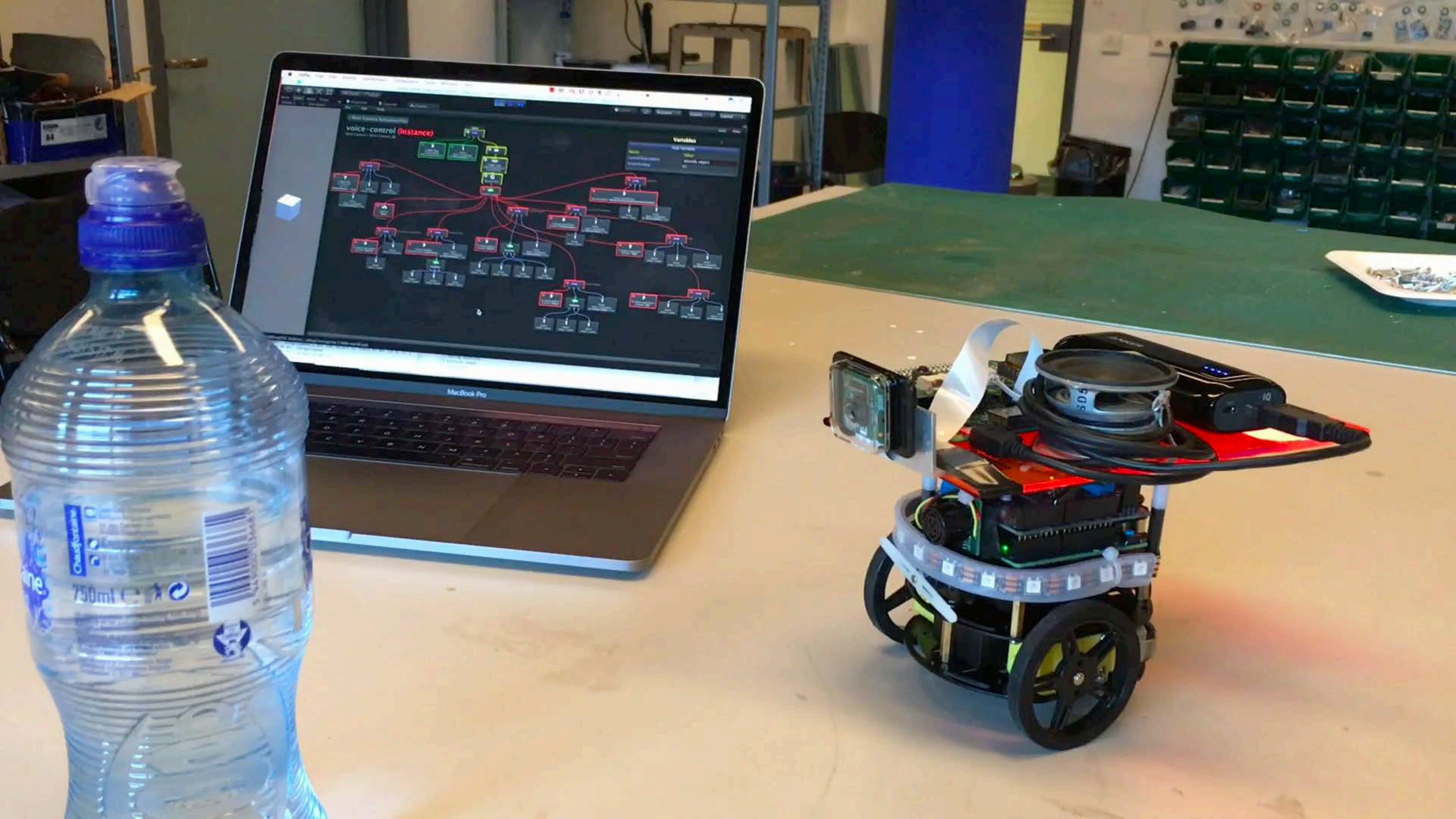
MACHINE LEARNING - SPEECH/OBJECT




voice-control (instance)
Variables
MacBook Pro
750ml

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NEXT STEPS

IBM Cognitive Services
Unity Machine Learning Agents
Personality configuration
Visualization of ML features/categories
???

https://github.com/pvanallen/delft-toolkit
http://www.philvanallen.com/portfolio/delft-ai-toolkit/