Supercon 6
Digikey
Presents

TOGETHER IN ELECTRIC DREAMS

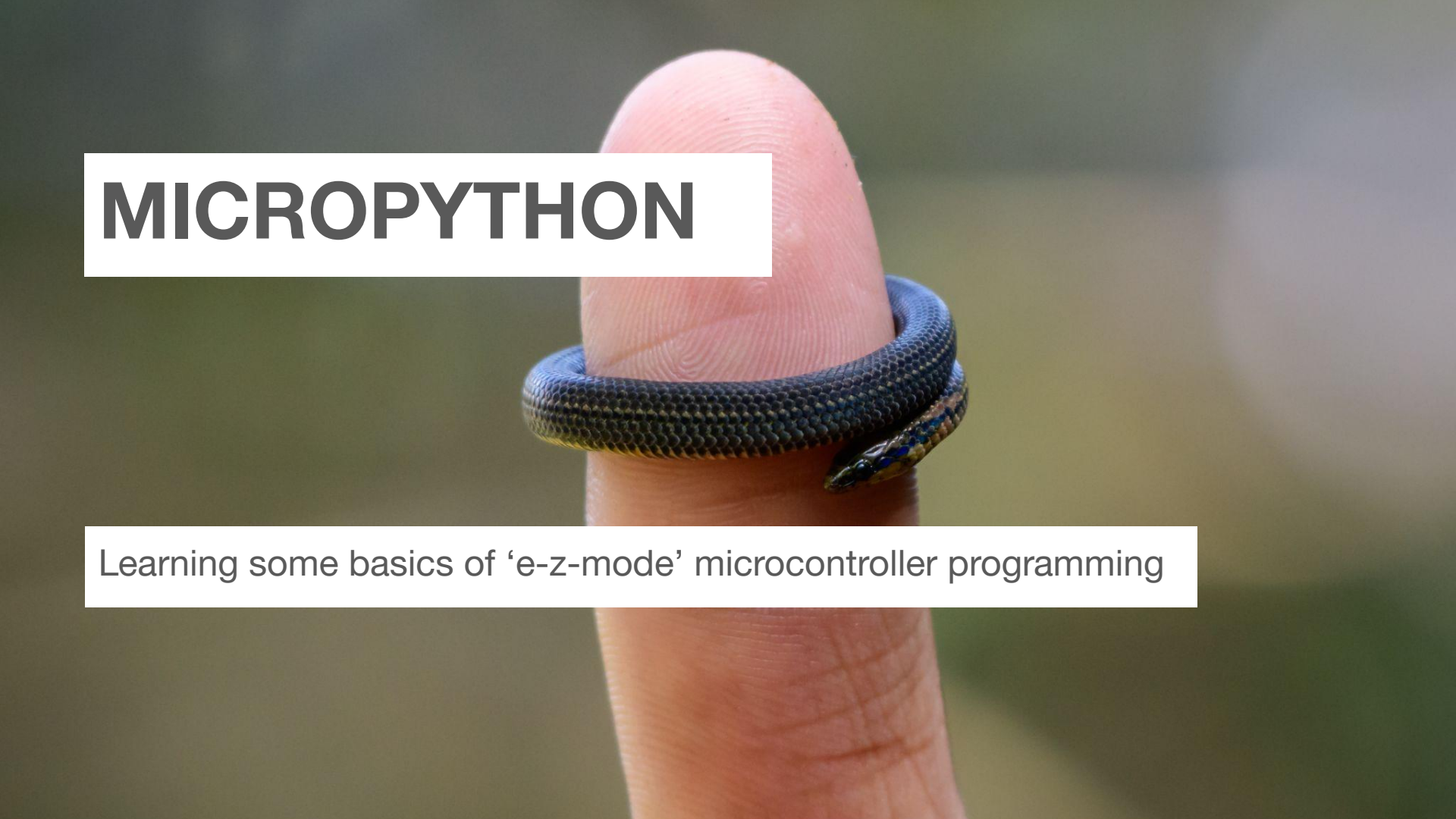

ADVERT


REALITY


REALITY


REALITY


WHAT ARE WE DOING HERE?



MICROPYTHON

Learning some basics of ‘e-z-mode’ microcontroller programming

MIMICRY

Generating ideas for our own personal companion

MODULES

Drive some servos and sensors and make them interact

Share knowledge and encouragement to ensure everyone in the group is equally confused.

MUTUALISM


KNOWN TO THE STATE
OF CALIFORNIA TO
CONTAIN CHEMICALS


ACHTUNG!
This is a low risk workshop, however:

SAFETY THIRST!

Be careful about short circuits.

Any output can become a short and release magical smoke.

We are working with low voltage, so consequences are mild.

Double check power connections.

Beware loose wires

SAFETY THIRST!

When cutting wire, hold both pieces of wire.

The loose end can fly and you'll take your eye out.

SAFETY THIRST!

Scissors.

Be careful to not cut yourself.

Don’t run with them.

SAFETY THIRST!

Glue.

Do not huff.

Do not stick non-workshop things together.

Be nice to the Hackaday HQ.


WE CAN REBUILD YOU


What does a companion look like?
https://www.instagram.com/odd_jayy/




JORVON MOSS

Robotic Designs

Jorvon [Odd-Jayy] Moss is an accomplished Maker best known for his Robotic Oddities. Jayy's art background, BFA in Illustration, and self-taught electronics skills have combined to help launch his career and promote the wonderful world of STEAM (Science, Technology, Engineering, Art, Math). This achievement, and the many viral videos under his belt, gained him recognition from major forces in the industry; including Digi-Key Electronics, Tested Inc. with Adam Savage, various electronic and tech Faires, and as the first Black person in Make Magazine (issue 76), garnering a spot in the Maker Museum.

This talk will explore the evolution of my companion robot including how I make them seem alive with movement and artificial intelligence.

LACM

Saturday, November 5, 2022
4:30 PM

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http://www.alexglow.com/


https://www.hackster.io/glowascii


https://www.gellacraft.com/

Free Tinker

Grab paper and pen and think of ideas, especially if I'm covering stuff you already know.

What animal represents me?

Do I have a personal trait I would like to externalise and parody for self-improvement?

The Disney sidekick they should have made.

Social commentary personified.

Workshop Dramatis Personae

OddJayy - Companion making powerhouse.

Nate - Coder and maker.

Kevin - Gently encouraging.

Dominic -

Paul - Workshop cat-herder and can google that for you.

What hardware are we using?

Raspberry Pi Pico W

I2C breakouts (Qwiic, Stemma QT, Breakout Garden)

SPI display

Servos

Arts & Crafts materials

Which firmware/software?

Pimoroni ‘batteries included’ MicroPython for Pico W

Breadcrumbs for later

CircuitPython would also work (and supports a wider range of hardware)

Arduino works (official and community)

C(++) (Hard mode, most performance)

Pico (W) Basic Survival Skills

Already done: Adding MP/CP/Arduino to a Pico/Pico W

BOOTSEL

flashnuke.uf2

Thonny is the ‘good enough’ way cross-platform

CircuitPython does the sensible ‘flash drive’ way

Breadcrumbs for the extra-nerdy:

mpremote.py and the other thing

BLINK.PY

REPL and main.py

Invoke the basic IO stuff

Choose a pin/led to twiddle

Twiddle it

SPLIT INTO SMALL GROUPS

There will be FOUR groups of up to FIVE peeps each.

Each group will have a complete set of stuff.

You will work together to make each bit work and understand it.

No geek left behind.

Inputs

Let’s connect stuff!

Sensors available: ToF, Accelero, Light, Touch, TODO

Outputs

Let’s make stuff blink and move!

Available: LCD, LED Matrix Haptic Buzzer, Servo, Continuous Servo

Amoeba

We’ll now hook a sensor up to an output to create a single-celled organism

A simple stimulus/response.

FREE TIME

You have 20 mins to play around with your inputs and outputs. Can you make them more lifelike? Can you give them quirks to make them less mechanical and have an individual character.

Looks through the scripts on the device for inspiration.

If you get stuck, ask around your group, or grab a helper.

Maybe trade your surplus items with others to try new things!

Moods

Now we have the basics of a sensory system, let’s look at how we start making a more complex organism.

Let’s create the concept of moods. Our little buddy can start having more complex responses to varying stimuli

Idle

We don’t just want a reactive creature. It should have some kind of internal life, so it’s not just waiting for a stimulus to show signs of life.

Emergent Behaviour

We’ve got the basic elements of a living organism now. From here, we start getting more creative, and adding finesse to the actions and emotions, to give them character.

FREE TIME

You have 30 mins to play around with personality and appearance.

Add individuality and complexity to your companion (or limb/tail)

Your group and helpers will be here to help and inspire.