

seeed studio



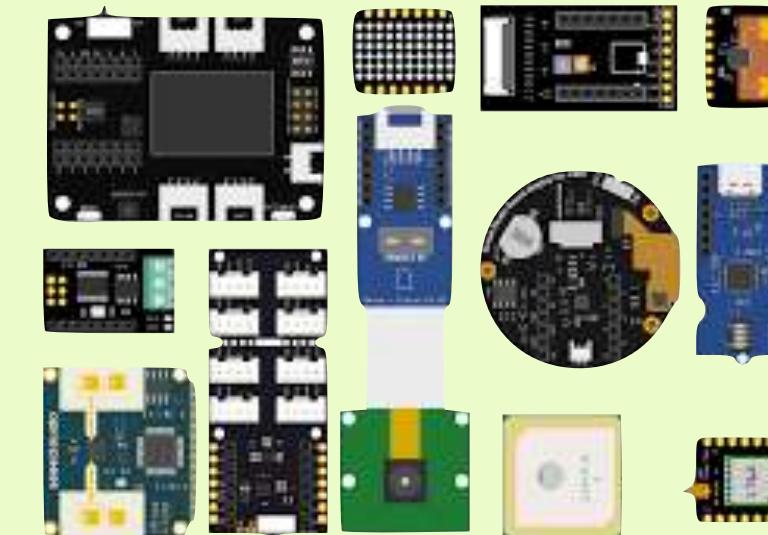
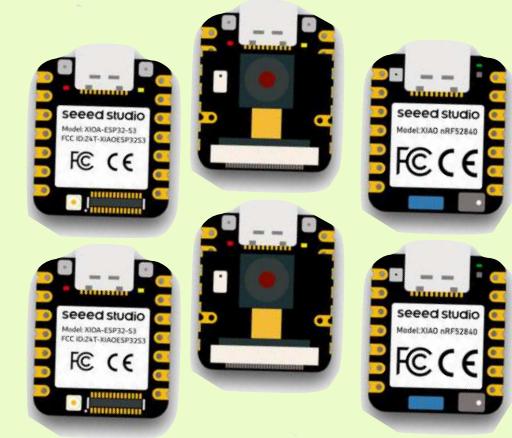
Seeed Studio XIAO

The smallest Arduino-compatible dev boards
for building your next AI gadgets

CONFIDENTIAL



Seeed Studio XIAO Ecosystem



Dev Boards

Thumb Size, Low Cost with Popular Chipsets



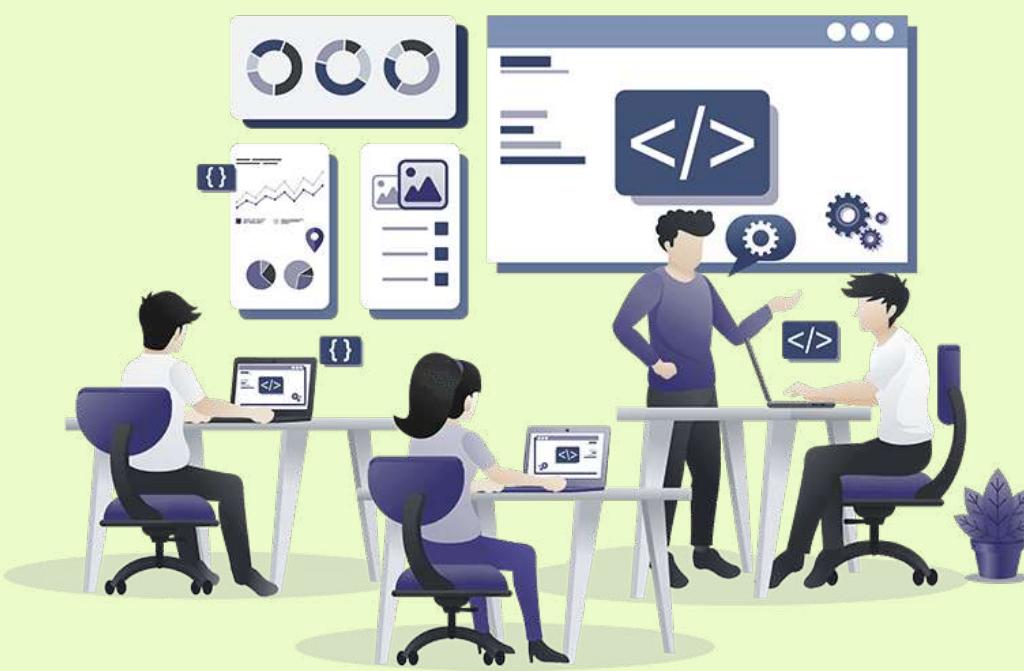
Accessory Add-ons

Expansion Boards, Sensors, Actuators, and more



Open Devices

Open Sources Devices Powered by XIAO



User Experience

Wikis, Courses, Resources for User Experience

Software Backbones

SenseCraft AI for No-Code Model Training and Deployment,
SenseCraft Data & Portal for IoT Data Visualisation

The Community

Makers and developers who co-build to this ecosystem by sharing projects & courses, contributing software dev and many more



Tiny, Powerful, XIAO



https://www.youtube.com/watch?v=A_XUi8tIKWk



Seeed Studio XIAO Features



Popular SoCs Integrated

RA4M1, RP2350, ESP32, RP2040, nRF52840, SAMD21, and more to leverage your Embedded Machine Learning Applications on MCUs



TinyML / AI Native

Compatible with Seeed's no-code model training and deployment platform SenseCraft AI, making tinyML scalable on MCUs



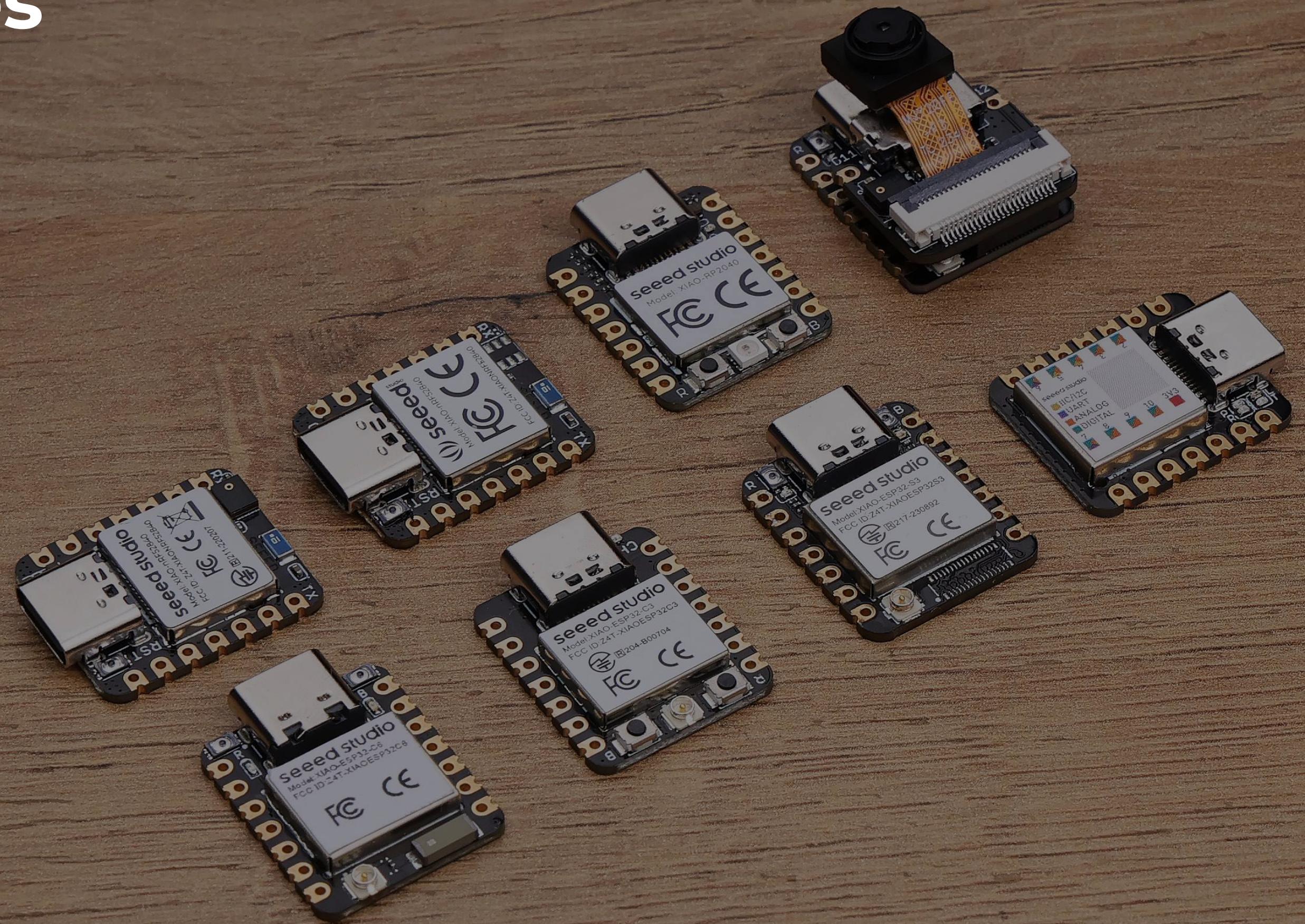
Thumb Size with SMD

Sized at 21x17.8mm with single-sided surface mount design, ready to blend in space-constrained and tap-on designs



Developer-Friendly

Natively compatible with Arduino, supporting PlatformIO, MicroPython, and CircuitPython and many other open source GitHub projects



Seeed Studio XIAO Series is a collection of thumb-sized, powerful microcontroller units (MCUs) tailor-made for space-conscious projects requiring high performance and wireless connectivity. Embodying the essence of popular hardware platforms, the Arduino-compatible XIAO series is the perfect toolset for you to embrace tiny machine learning (TinyML) on the Edge.



Seeed Studio XIAO in Numbers

10

Dev Boards

21×17.8

mm = 2 Gummy Bears

300+

Add-on Accessories

500+ Million

Views on YT, TikTok

500,000+

Developers' Choices

2,000,000+

Pieces Shipped Globally



Seeed Studio XIAO Dev Boards

[Detailed Comparison HERE](#)

XIAO SAMD21

Classic for Arduino beginners,
with courses



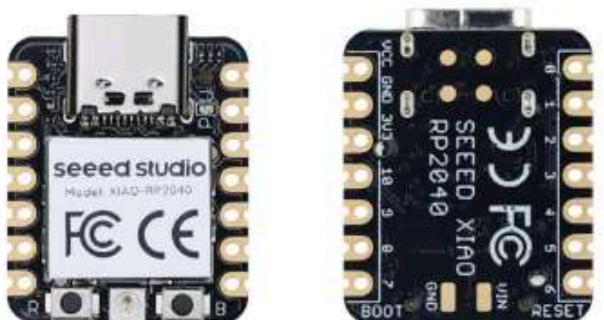
XIAO NRF52840

Ultra-low power consumption,
perfect for BLE applications



XIAO NRF52840 Sense

Low power BLE with onboard
microphone and 6-axis IMU



XIAO RP2040

Raspberry Pi Ecosystem with
great MicroPython support



XIAO RP2350

MicroPython-ready based on
Raspberry Pi RP2350

Powered by
Raspberry Pi

XIAO ESP32C3

Cost effective with Wi-Fi and
BLE on board



XIAO ESP32S3

High-performance dev
board with Wi-Fi and BLE



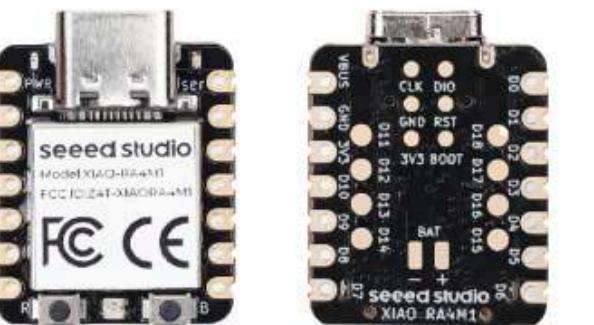
XIAO ESP32S3 Sense

Mini camera perfect for
computer vision



XIAO ESP32C6

2.4GHz Wi-Fi 6, BLE 5.0,
Zigbee, and Thread for
Matter



XIAO RA4M1

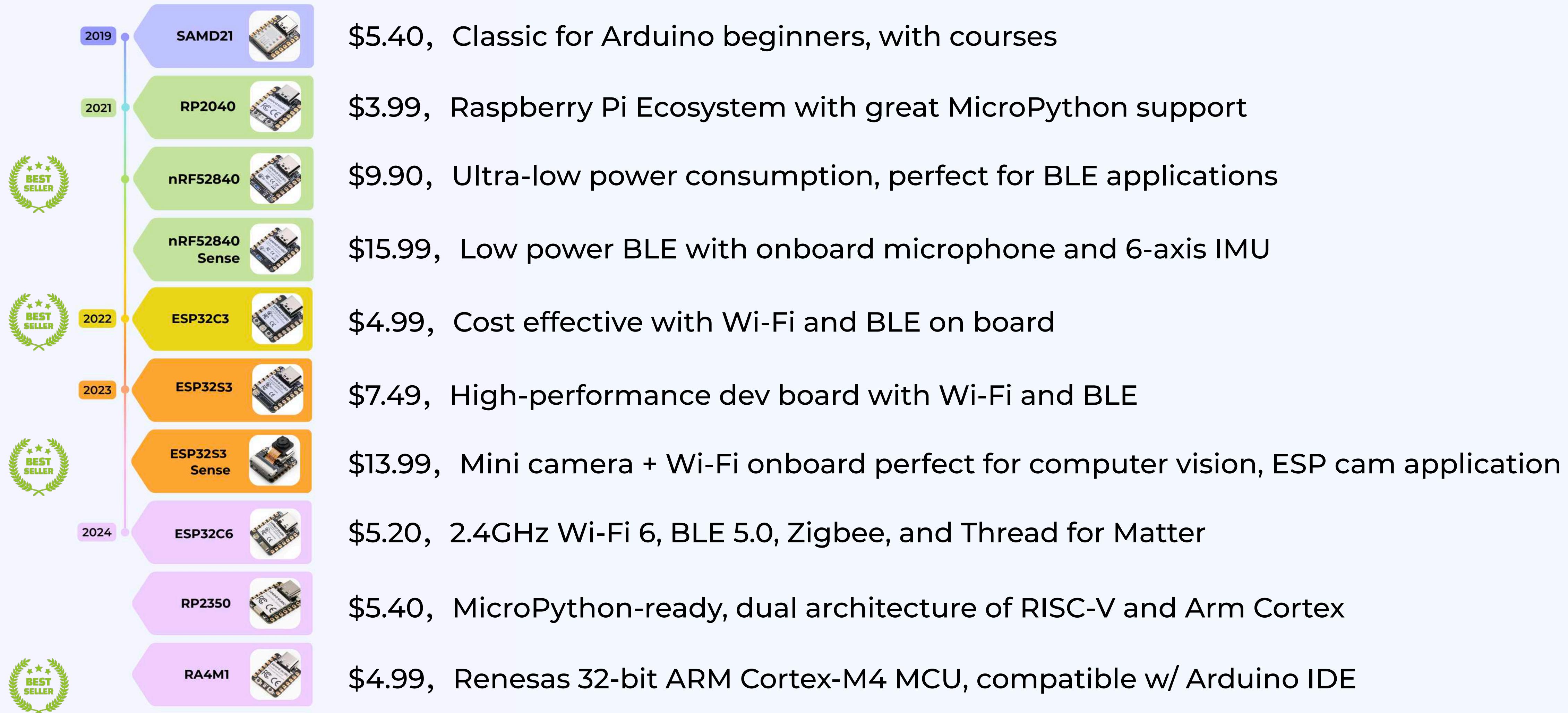
Renesas 32-bit ARM Cortex-
M4 MCU, compatible w/
Arduino IDE

NEW



Seeed Studio XIAO Launch Timeline

Seeed Studio XIAO
Launch Timeline



Credit @ Profe Tolocka

MSRP \$5.20

Seeed Studio XIAO ESP32C6

Matter Native Dev Board Perfect for Applications
Requiring Multiple Connectivities



Enhanced Connectivity

Wi-Fi 6, BLE 5,
Zigbee, Thread,
Matter



Great RF Performance

BLE/Wi-Fi
Range up to
80m



On-Chip Encrypted Security

Secure Boot,
Flash Encryption,
TEE



Developer Friendly

Arduino,
ESP-IDF
Supported

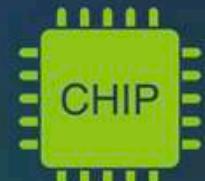


MSRP \$5.40

seeed studio

Seeed Studio XIAO RP2350

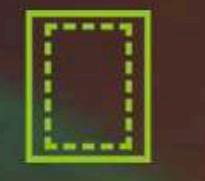
The Smallest MicroPython-Ready Dev Board



Powered by
Raspberry Pi
RP2350



Dual Arm Cortex-M33 @ 150MHz
with FPU



Classic XIAO
Form Factor
21x17.8mm



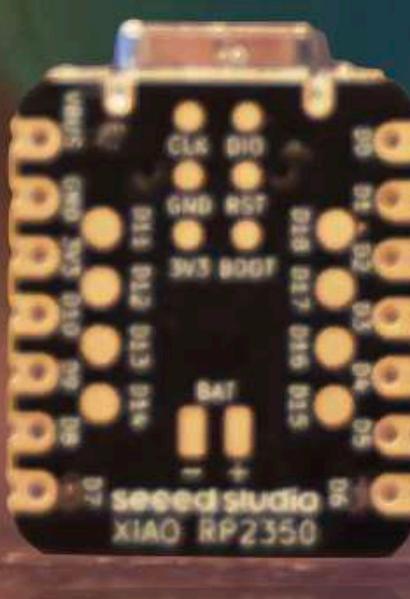
19 GPIOs &
1 RGB LED
Onboard



Compatible with
MicroPython, C,
and C++



Ultra-low
power, 27µA in
sleep mode



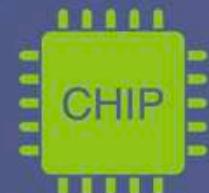
Order NOW

400pcs limited in stock

seeed studio 

Seeed Studio XIAO RA4M1

The Thumb-Size 32-bit ARM® Cortex®-M4 Core Dev Board



Powered by
Renesas
RA4M1



Running @ 48MHz
w/ FPU, 256 KB
Flash, 32 KB SRAM



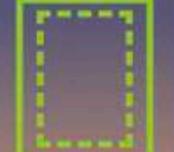
Natively
Compatible with
Arduino IDE



14-bit ADC,
DAC, USB, CAN
Bus, RGB LED



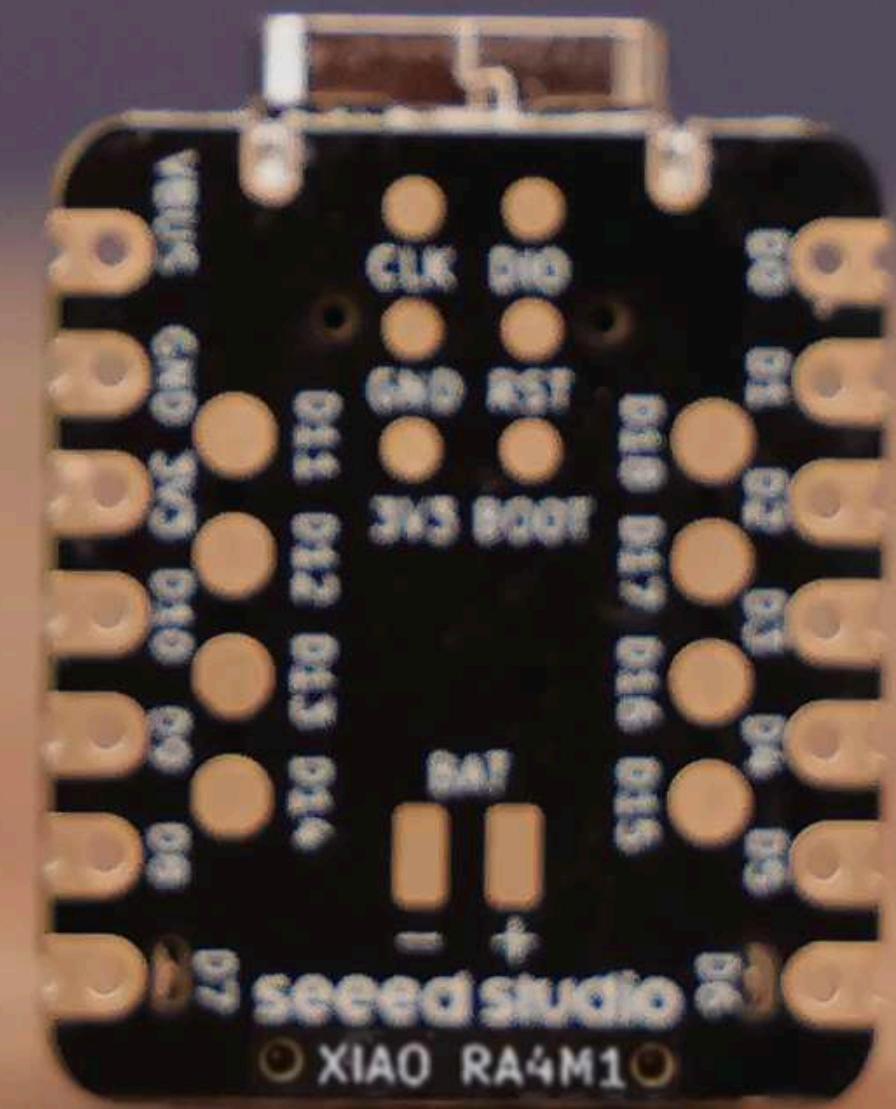
19 Multi-
Function GPIOs
Onboard



Classic XIAO
Form Factor
21x17.8mm

Order NOW

MSRP \$4.99



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SILICON LABS

Seeed Studio XIAO MG24 (Sense)

Thumb-Sized Dev Board Tailored for Battery-Powered Matter Applications



Powerful SoC

Silicon Labs' EFR32MG24, 32-bit 78 MHz ARM Cortex®-M33 with DSP instruction



Multiple Protocols

Common 2.4 GHz Wireless Protocols of Matter, OpenThread, Zigbee, BLE 5.3, Bluetooth Mesh



Super Low Power Design

Power consumption less than 5µA in sleep mode, ideal for battery-powered applications



Great On-Board Resources

Additional 4MB Flash battery charging circuit, 19 GPIOs, LED and 2 sensors of Mic and 6-axis IMU for XIAO MG24 Sense



Outstanding RF

On-board antenna with up to 80m BLE range, an interface for external UFL antenna reserved



Encrypted Security

A separated CPU based hardware secure engine, enabling Secure Vault functions

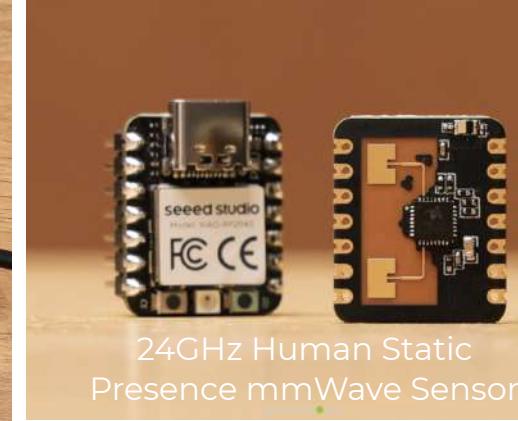


Seeed Studio XIAO Accessory Add-ons, Kits & Devices

AI Sensors



Grove Vision AI V2 with Camera



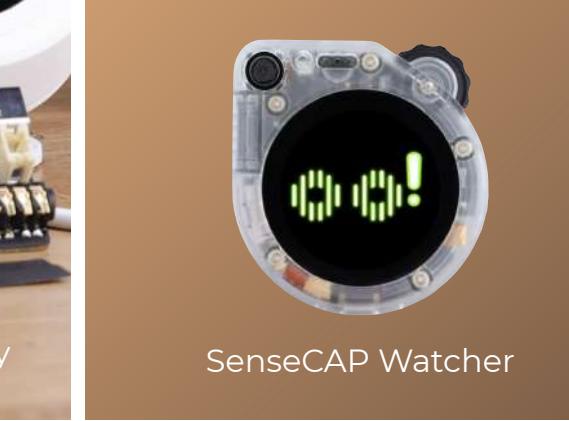
24GHz Human Static Presence mmWave Sensor



Grove Smart IR Gesture Sensor



ReSpeaker USB 2-Mic Array for XIAO ESP32S3



SenseCAP Watcher

Kits & Devices



Grove Starter Kit For Seeed Studio XIAO



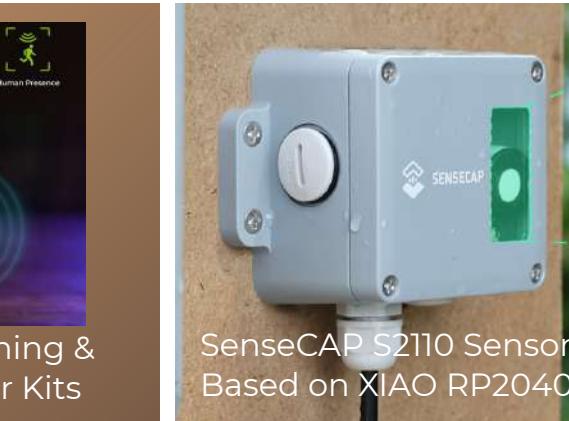
XIAO ESP32S3 for Meshtastic & LoRa Dev Kit



ReSpeaker Lite Voice Assistant Kit Based on XIAO ESP32S3



60GHz mmWave Fall, Breathing & Heartbeat Detection Sensor Kits

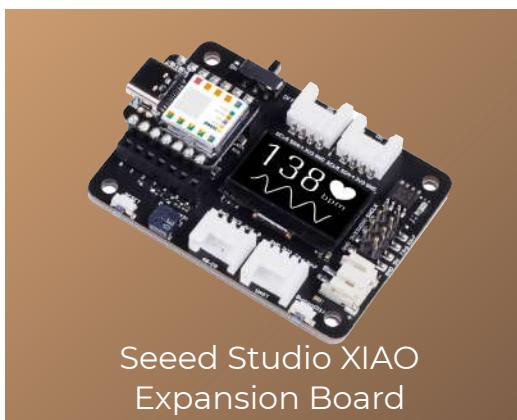


SenseCAP S2T10 Sensor Builder Based on XIAO RP2040



mmWave Human Detection Sensor Kit

Expansion Boards



Seeed Studio XIAO Expansion Board



Grove Shield For Seeed Studio XIAO

Expansion Modules (Sensors, Actuators and more)

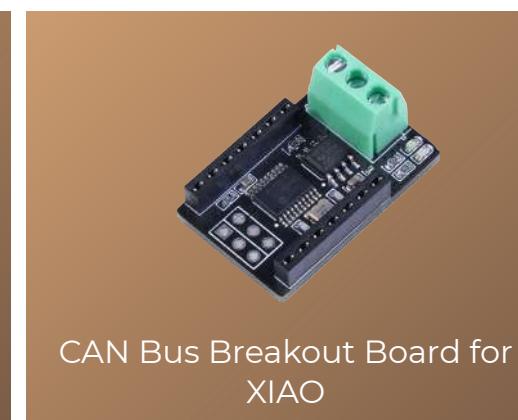


Seeed Studio Grove Modules

Makers' Favorite



6x10 RGB WS2812B MATRIX For XIAO



CAN Bus Breakout Board for XIAO



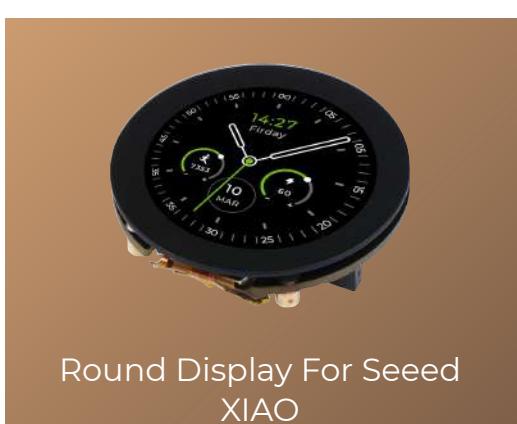
Quectel L76K GNSS Add-On Module



XIAO Premium 3pcs Pack
with Pin-Headers

3pcs
Elegant safety packaging
Included 6pcs Pin Headers
10% OFF
10% Discount & Free Shipping

Displays



Round Display For Seeed XIAO



E-Paper Breakout Board for XIAO



4.2" Monochrome ePaper Display



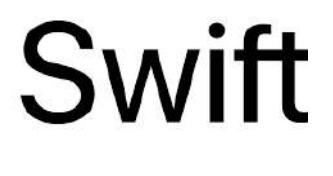
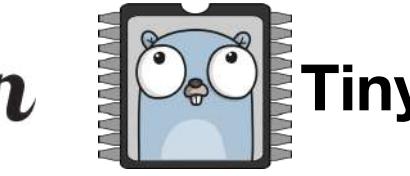
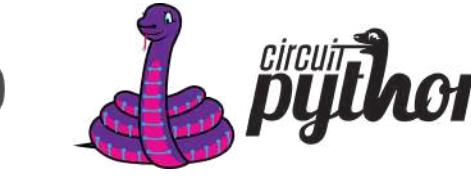
2.9" 4-Color ePaper Display



Seeed Studio XIAO Compatible Ecosystems

[Explore more HERE](#)

Supported Languages / Platforms



Communications



Supported RTOS



Smart Home and Automation



TinyML / Embedded Machine Learnings



Prototyping Tools



Other Popular Applications



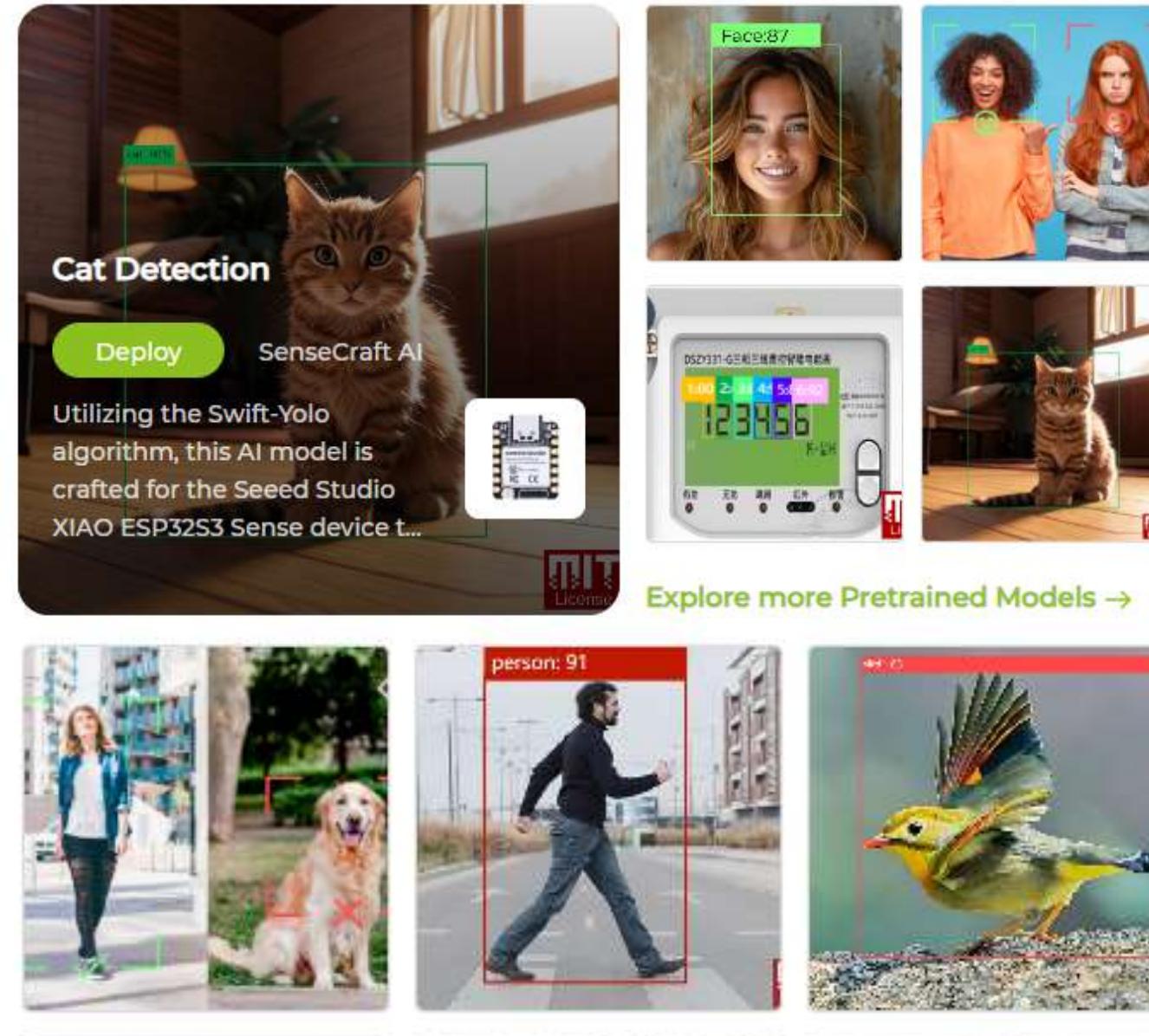
IoT Clouds and IoT Platforms





No-Code AI with Seeed Studio XIAO & SenseCraft AI

SenseCraft AI, The Go-To Platform for No Code Model Training, Deployment and More



SenseCraft AI Multi-Scene Classification

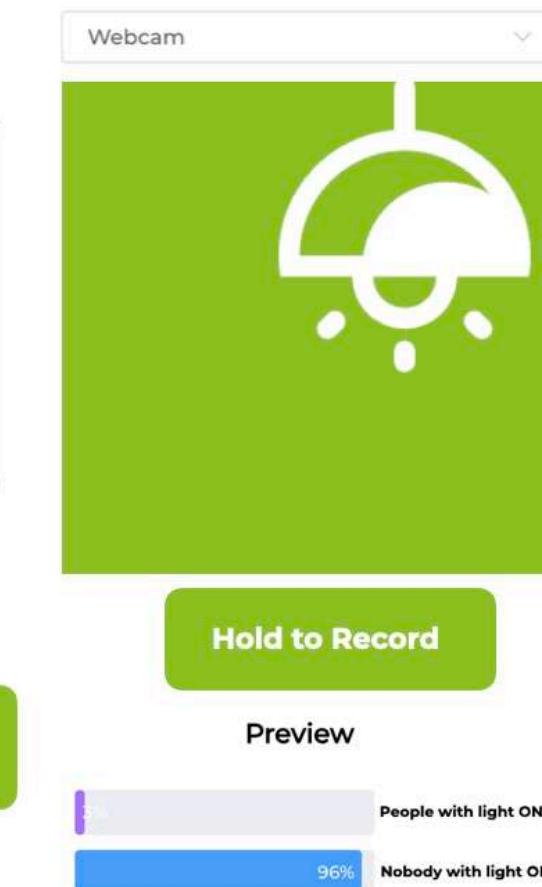
Step 1 Collect Classes of Scenes

- Class 1 PPL with light on
-
- Class 2 No ppl with light on
-

Step 2 Train with One Click

Grove Vision AI(V2)

Training successfully! [Click here](#) to use the model.



Generate AI Detection Model

Quick Training Image Collection Training

Step 1: Enter object name

Step 2: Training

1 Extensive Model Zoo

300 pre-trained models ready for deployment

2 No-Code Multi-Scene Classification Model Training

2 step to train a vision model that recognise multi-scenes

3 LVM Assisted Model Generation & Training

Train object detection models by typing its name ONLY



No-Code AI with Seeed Studio XIAO & SenseCraft AI

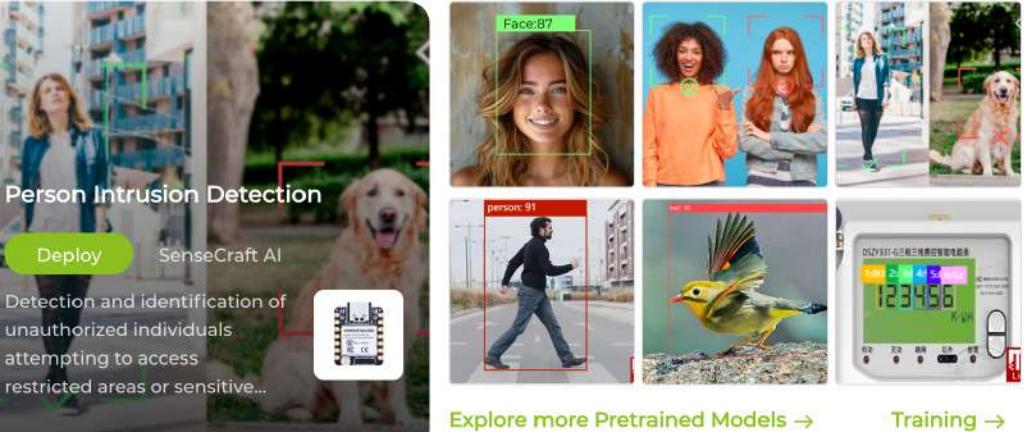
3 Step to Deploy Model for Your Application

Start your journey: Deploy a pretrained Model

Step 1: Discover Pretrained Models

Grove - Vision AI V2
XIAO ESP32S3 Sense

Person Intrusion Detection
Deploy SenseCraft AI
Detection and identification of unauthorized individuals attempting to access restricted areas or sensitive...
Explore more Pretrained Models → Training →

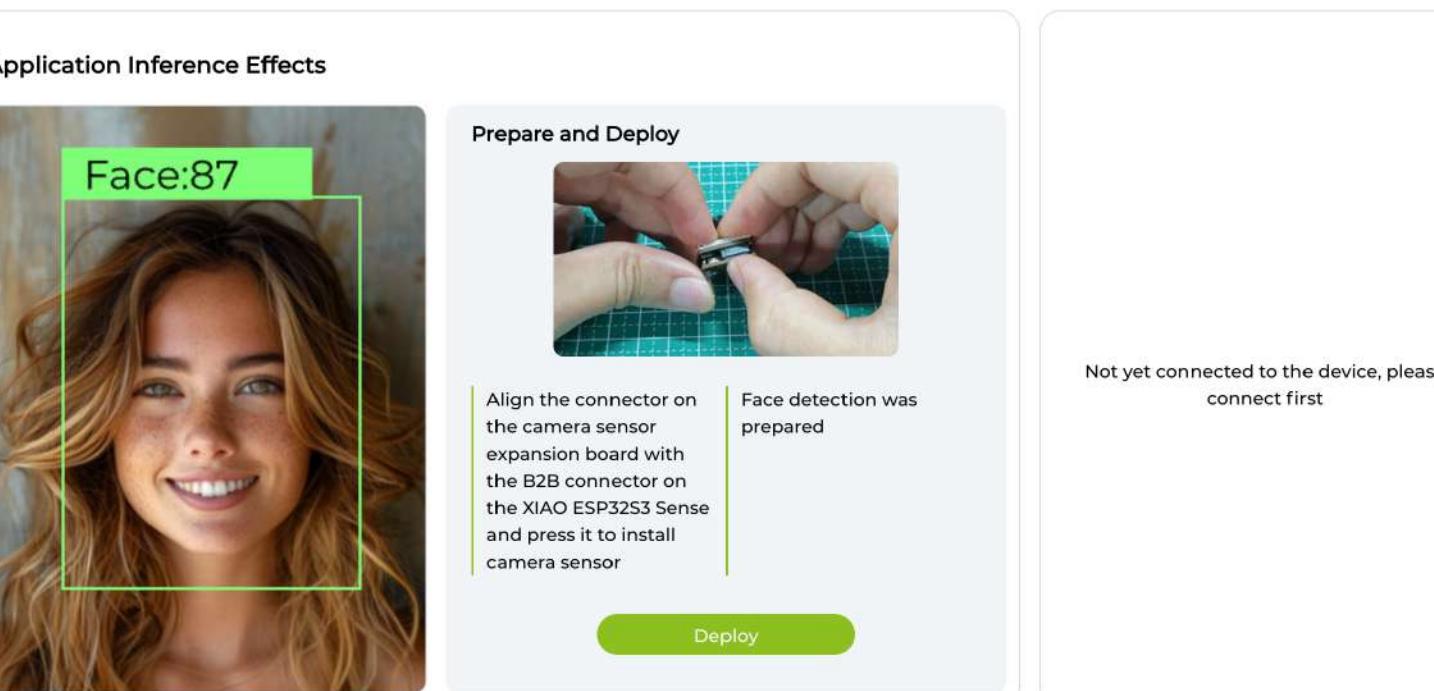


Step 2: Deploy and Preview Vision

Application Inference Effects
Face:87

Prepare and Deploy
Align the connector on the camera sensor expansion board with the B2B connector on the XIAO ESP32S3 Sense and press it to install camera sensor
Face detection was prepared
Deploy

Not yet connected to the device, please connect first



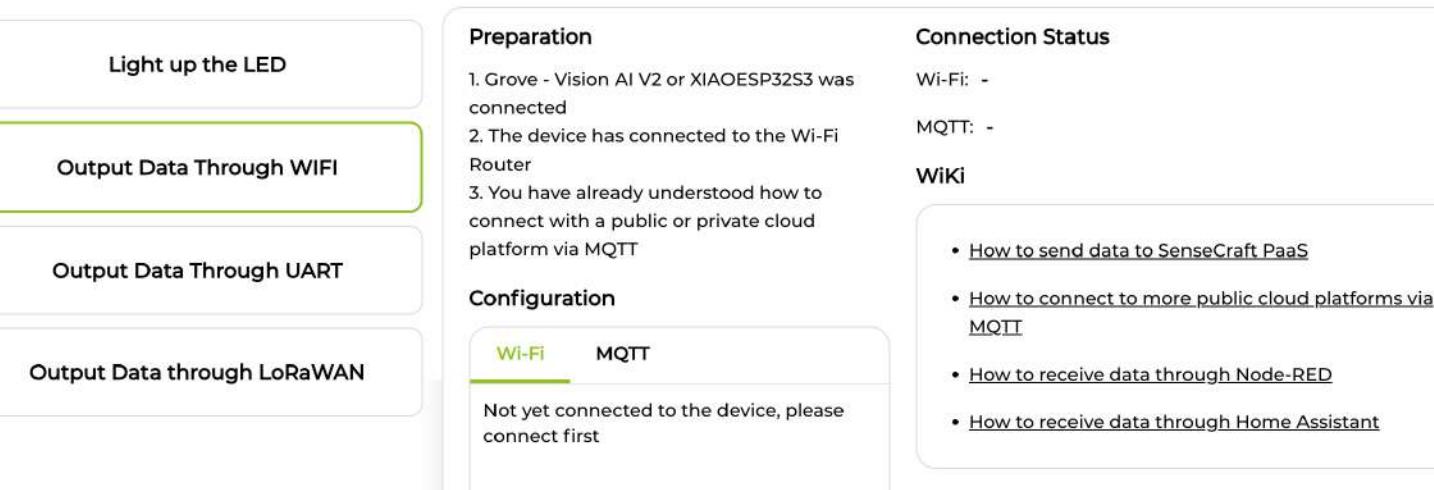
Step 3: Sensor Output

Light up the LED
Output Data Through WiFi
Output Data Through UART
Output Data through LoRaWAN

Preparation
1. Grove - Vision AI V2 or XIAOESP32S3 was connected
2. The device has connected to the WiFi Router
3. You have already understood how to connect with a public or private cloud platform via MQTT

Connection Status
Wi-Fi: -
MQTT: -

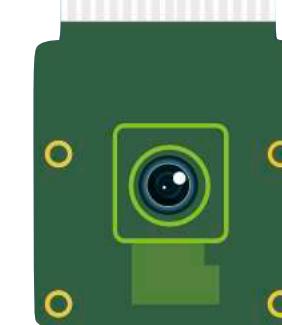
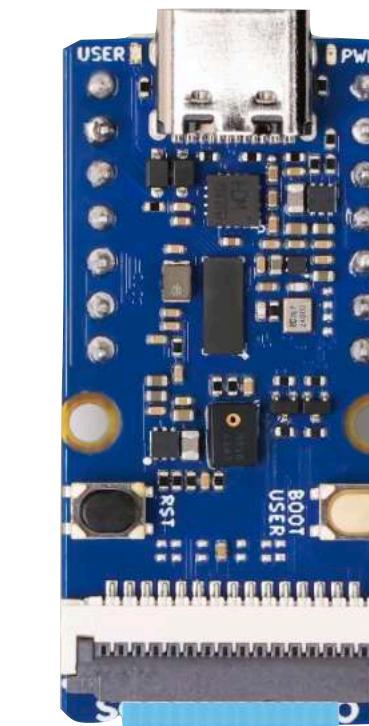
Configuration
Wi-Fi MQTT
Not yet connected to the device, please connect first



2 XIAO Ecosystem Products Supported by Now



XIAO ESP32S3 Sense

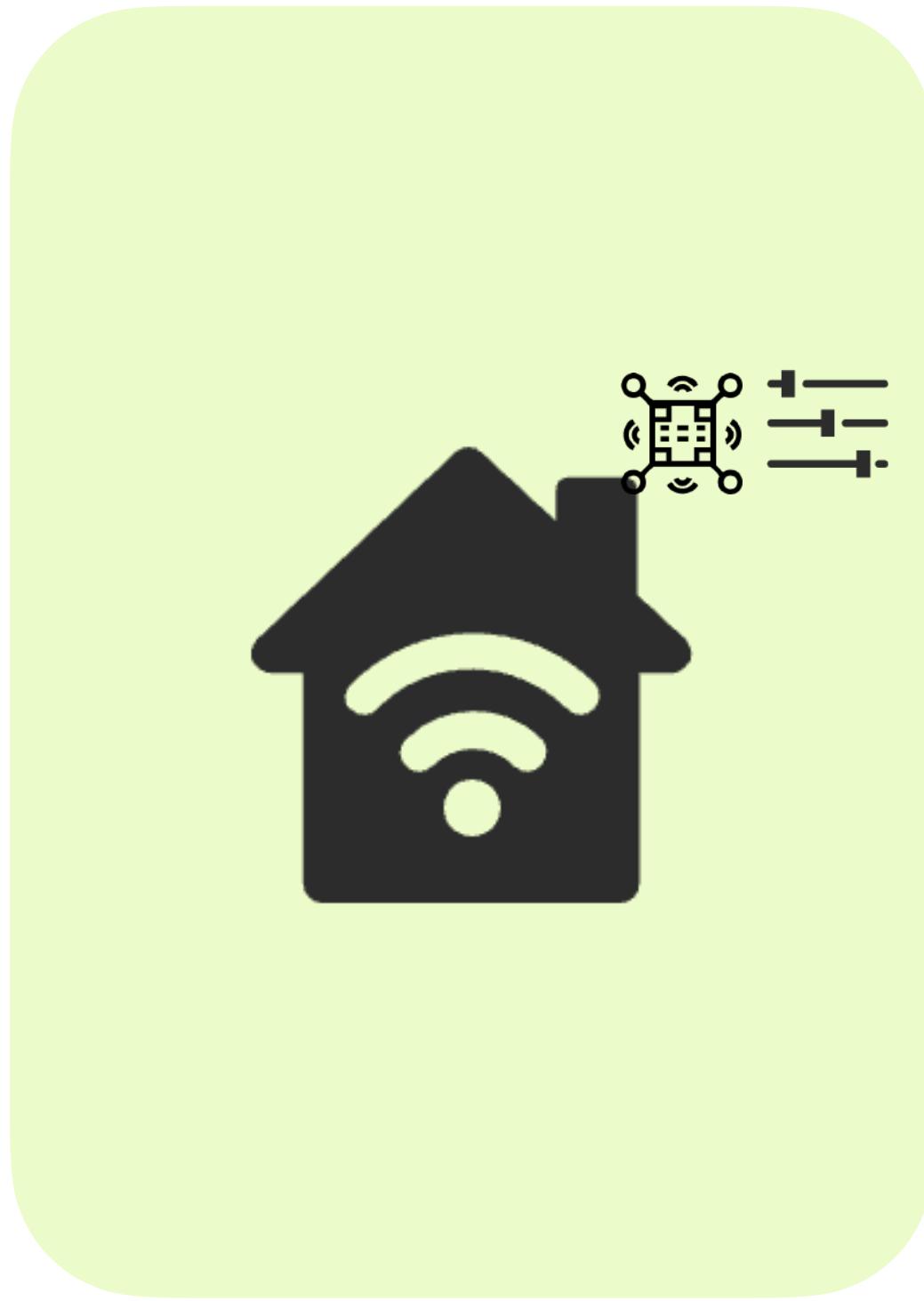


Grove Vision AI Module V2 and Its Kit

<https://sensecraft.seeed.cc/ai>

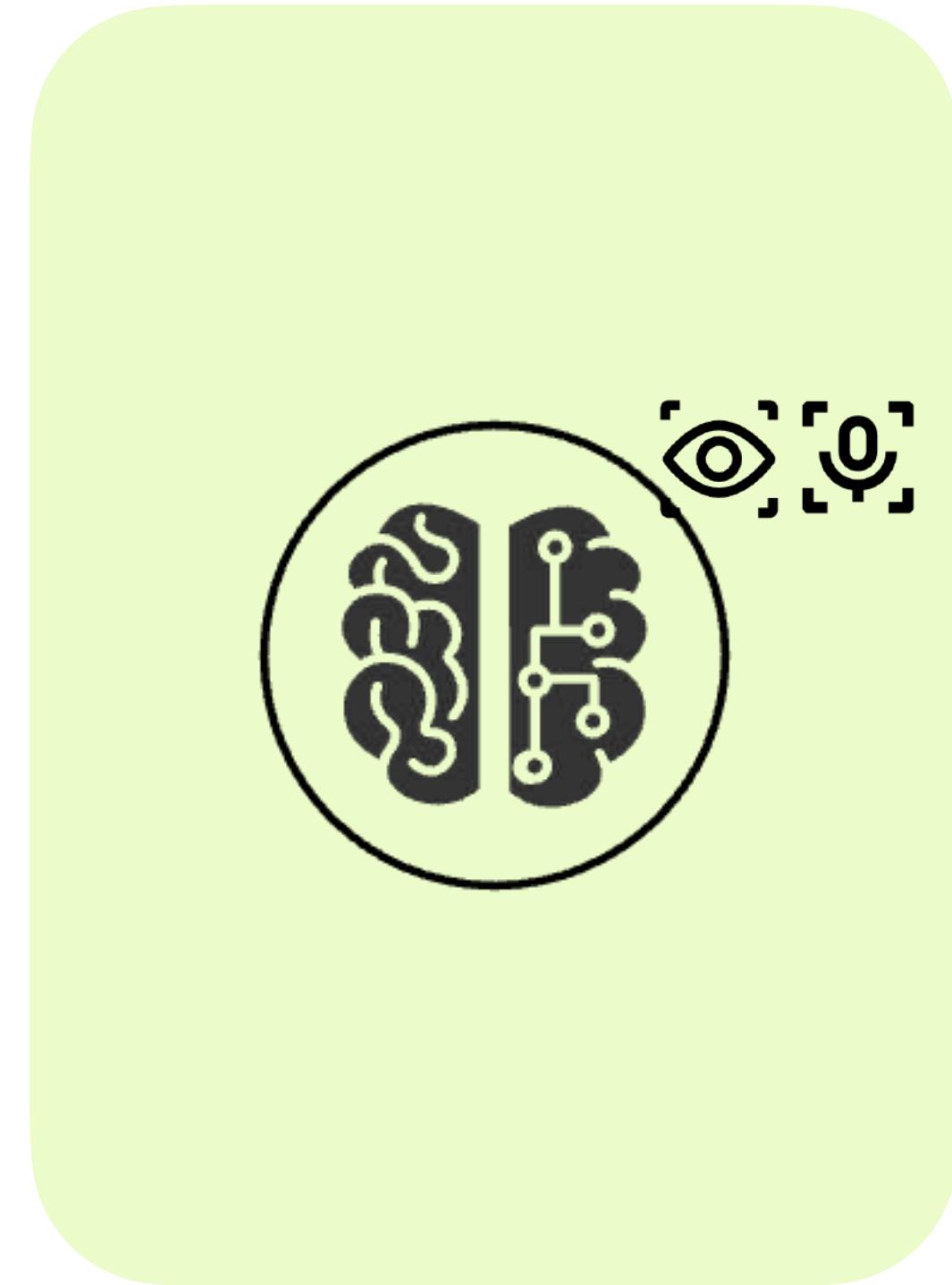


Seeed Studio XIAO Applications



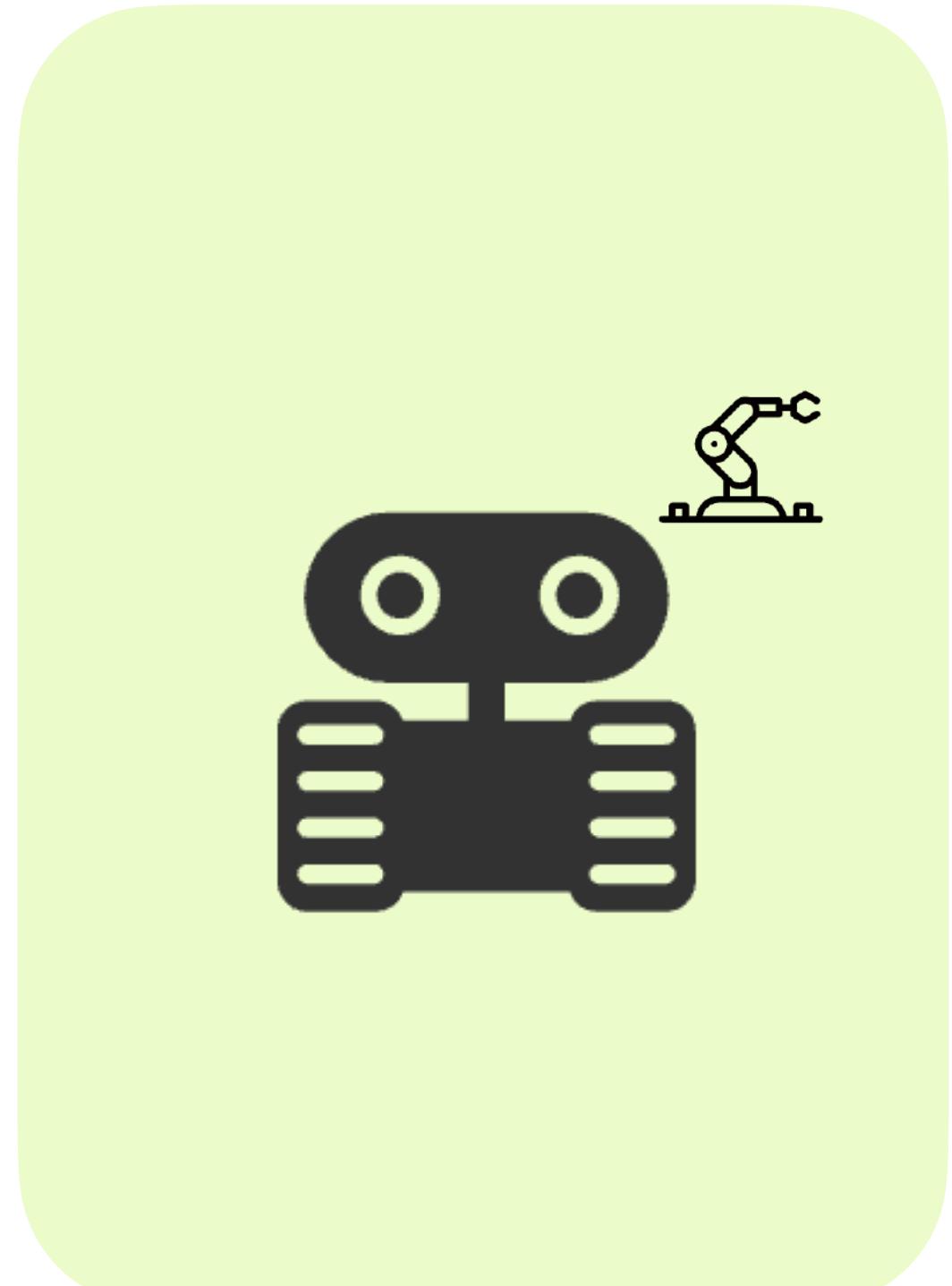
Smart Home / IoT

Monitoring and control



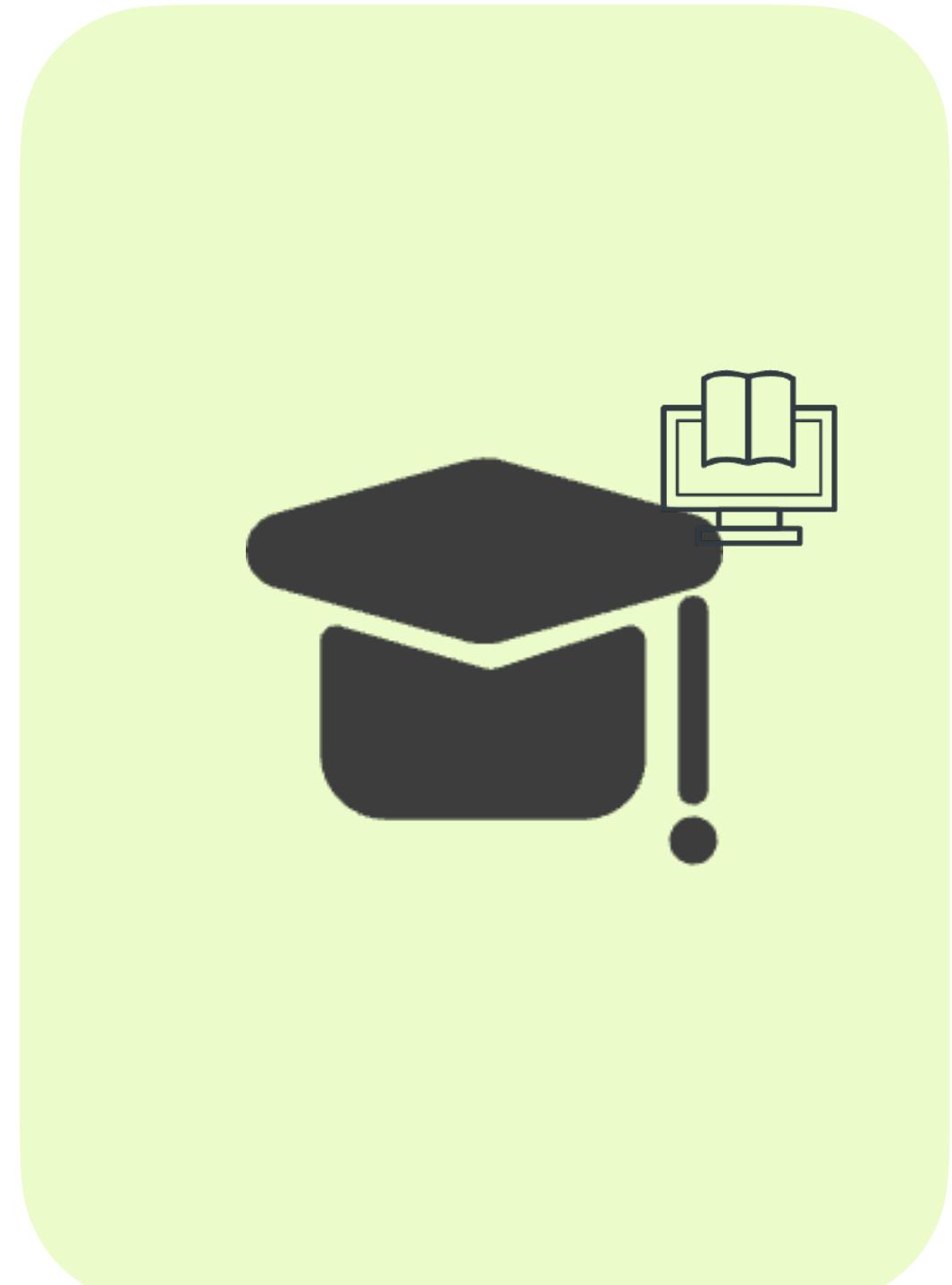
TinyML

Vision AI and voice recognition



Robotics

Communication, motor control, navigation

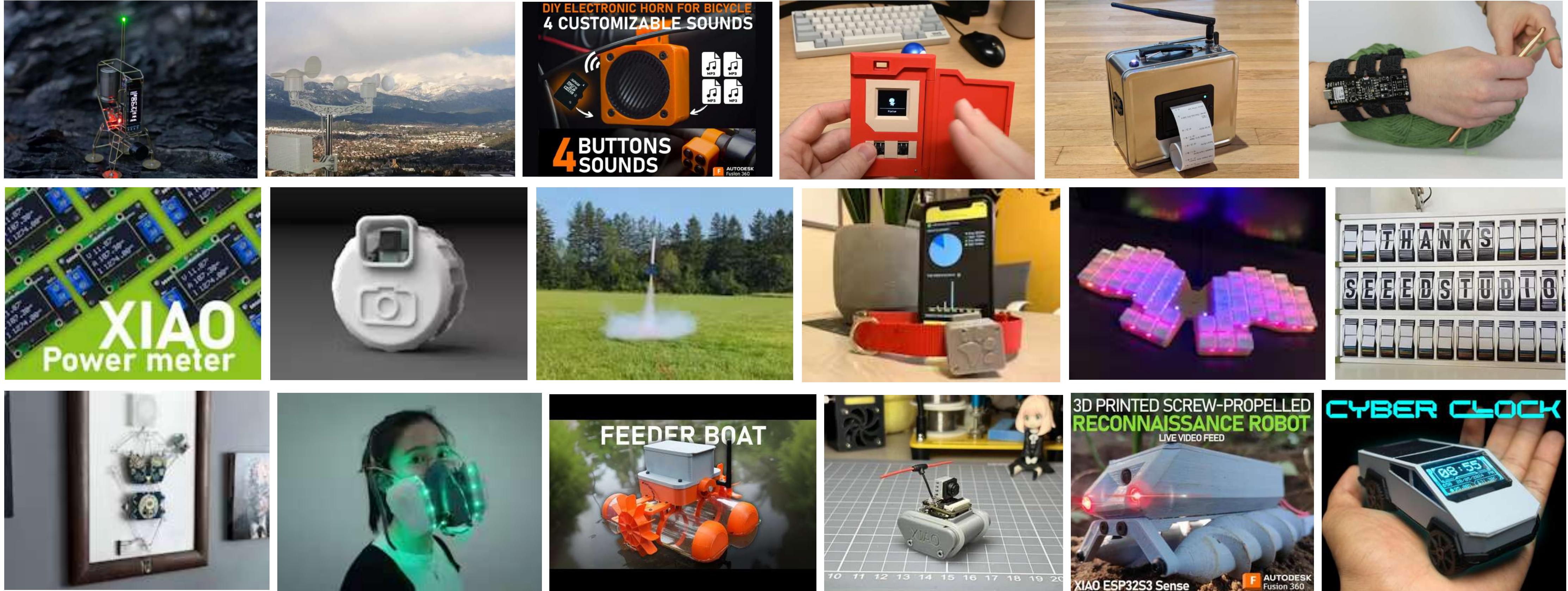


STEAM Edu

No-Code AI, Arduino programming



Seeed Studio XIAO Community Projects 1600+



600+ Projects
on Hackaday



500+ Projects
on Hackster



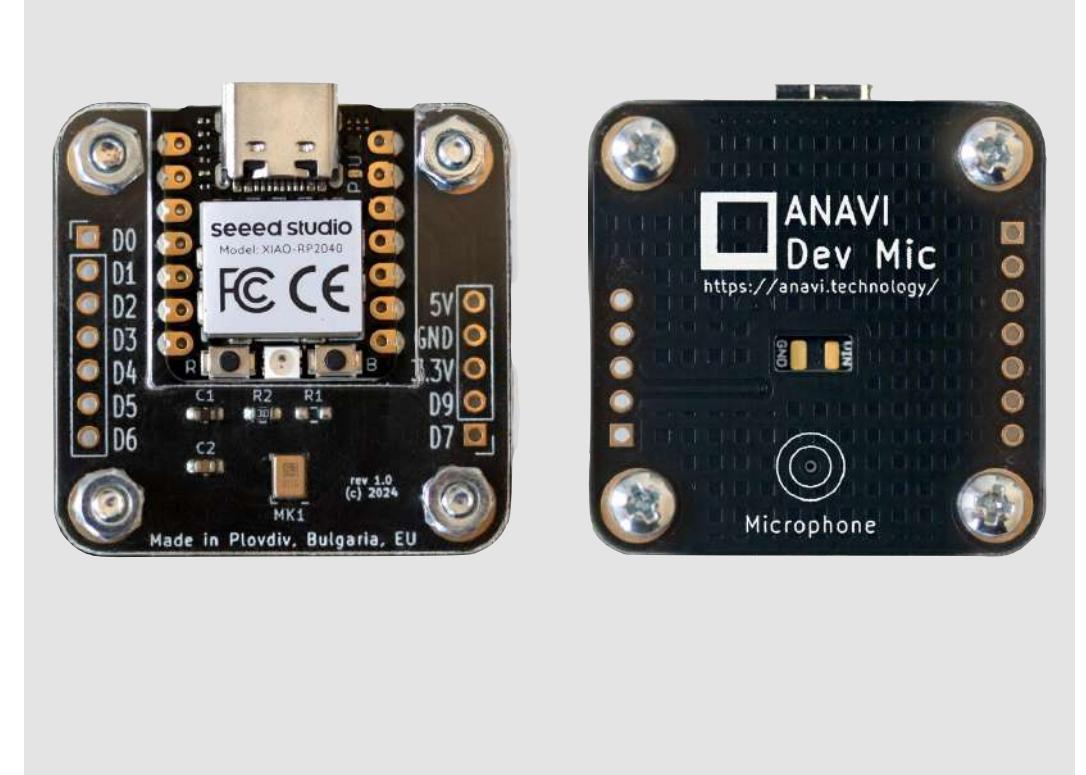
300+ Projects
on Instructables



200+ Projects
on GitHub



Scale-up Products Based on Seeed Studio XIAO

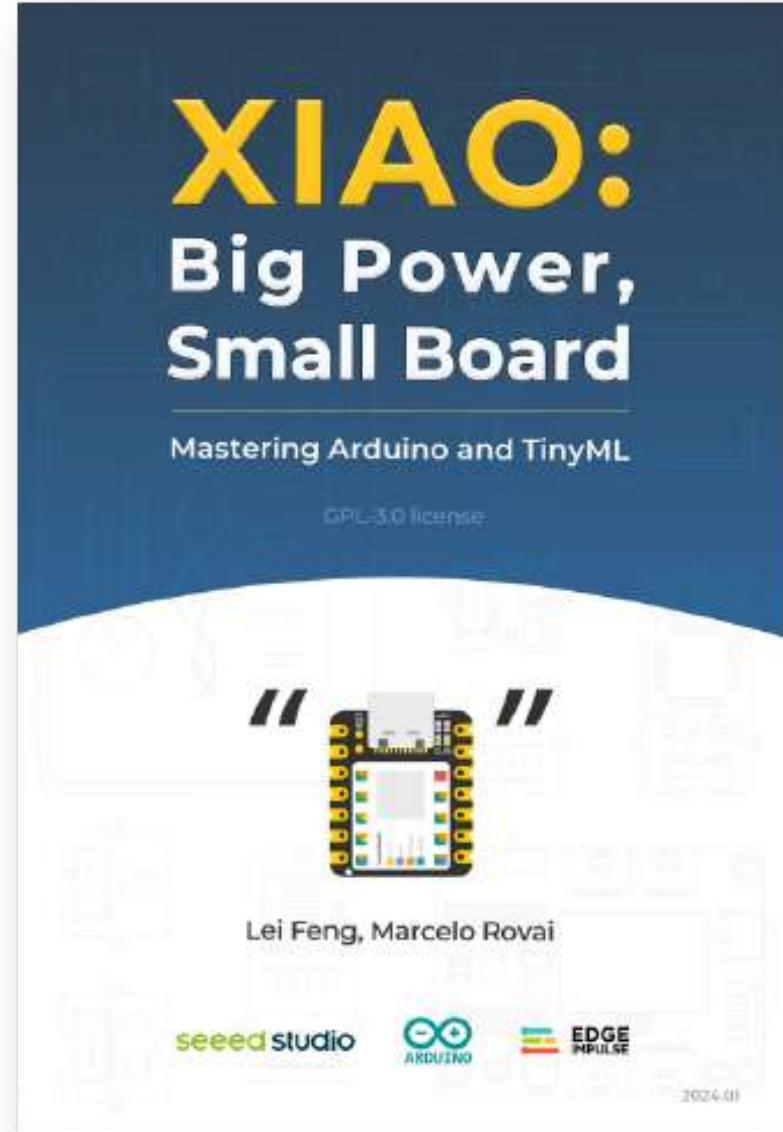


IV3 Clock





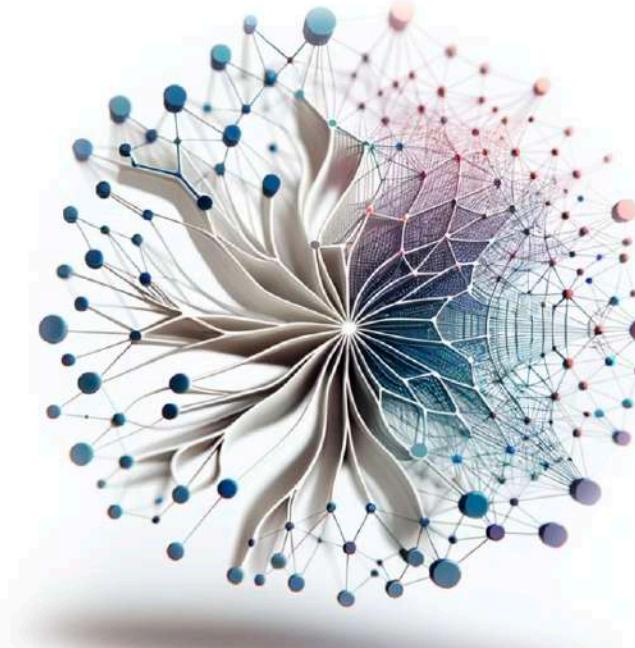
Seeed Studio XIAO for EDU



[Book: XIAO, Big Power, Small Board](#)
By Marcelo Royal, Lei Feng

MACHINE LEARNING SYSTEMS

Principles and Practices of Engineering Artificially Intelligent Systems



[MACHINE LEARNING SYSTEMS](#)
By Vijay Janapa Reddi @ Harvard University



[XIAO SAMD21 In Action](#)
By TinkerGen



[Seeed Studio Wiki Tutorials](#)
By Seeed Dev Team



[XIAO in Fab Academy: Fab XIAO, How to Create a Dev Board from Scratch by Adrian Torres](#)



[TinyML with the Seeed XIAO Part 1 & 2](#)
By Jim Bob Bennett at Microsoft Reactor



[Maker100-Eco \(Economy\) Robotics, IoT and TinyML Machine Learning Course](#)
By Jeremy Ellis

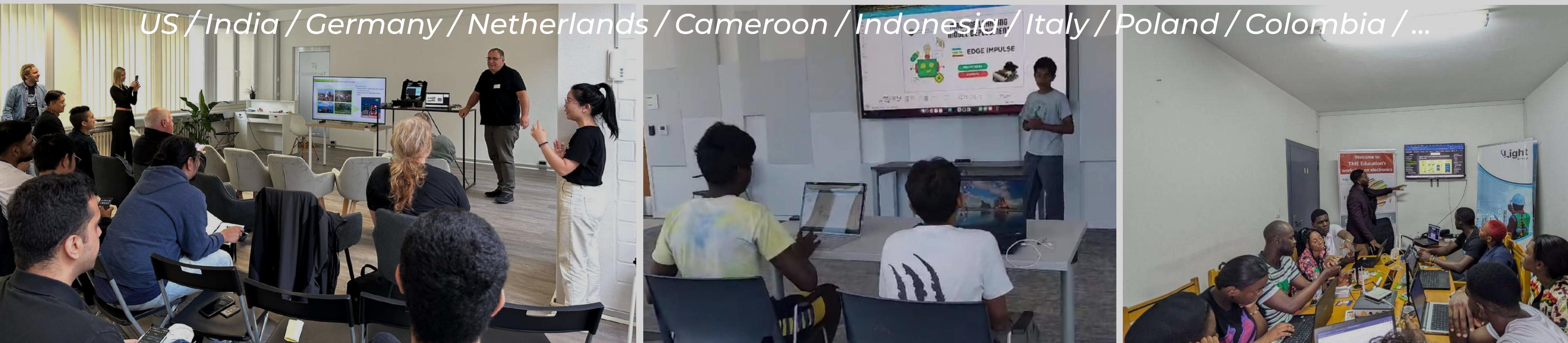


Seeed Studio XIAO Workshops

[Explore more HERE](#)



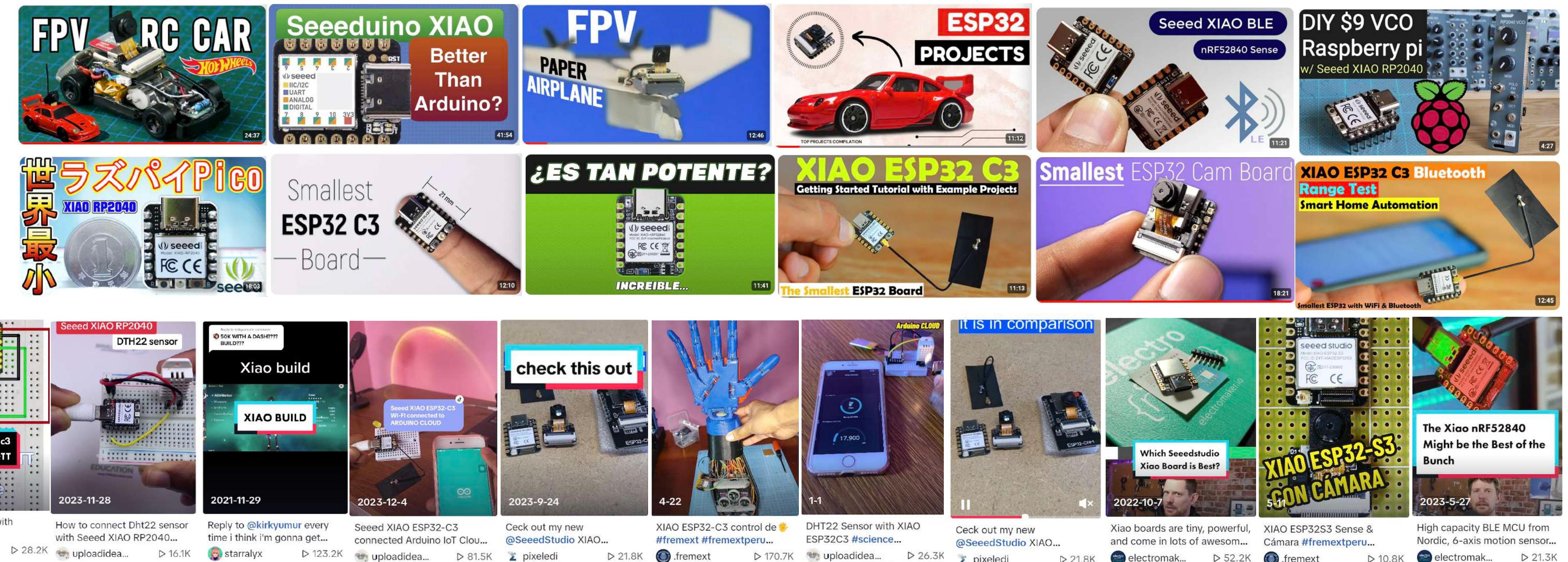
How to Add AI to Almost Everything





Seeed Studio XIAO Reviews

Over 500 Million views on



Featured on 100+ Media



CNX SOFTWARE
AN AVNET COMMUNITY

Make: tom'sHARDWARE

Embedded
COMPUTING DESIGN

Geeky Gadgets



MEHATRONIKA
<http://www.magazinmehatronika.com>

NN 映维网



Mashable



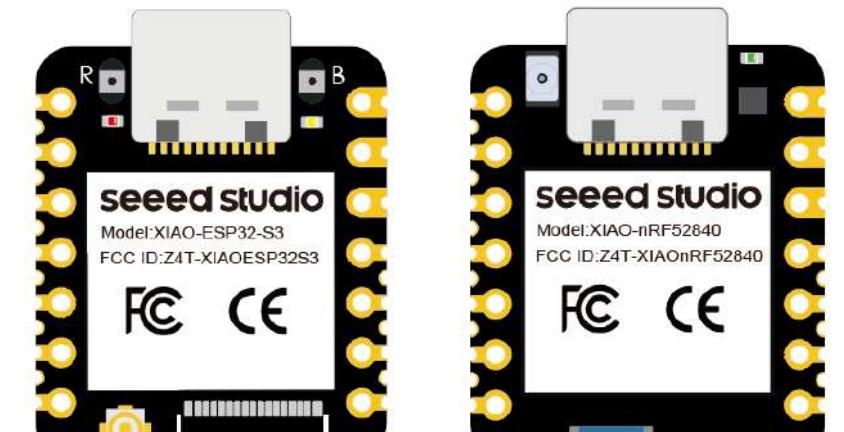
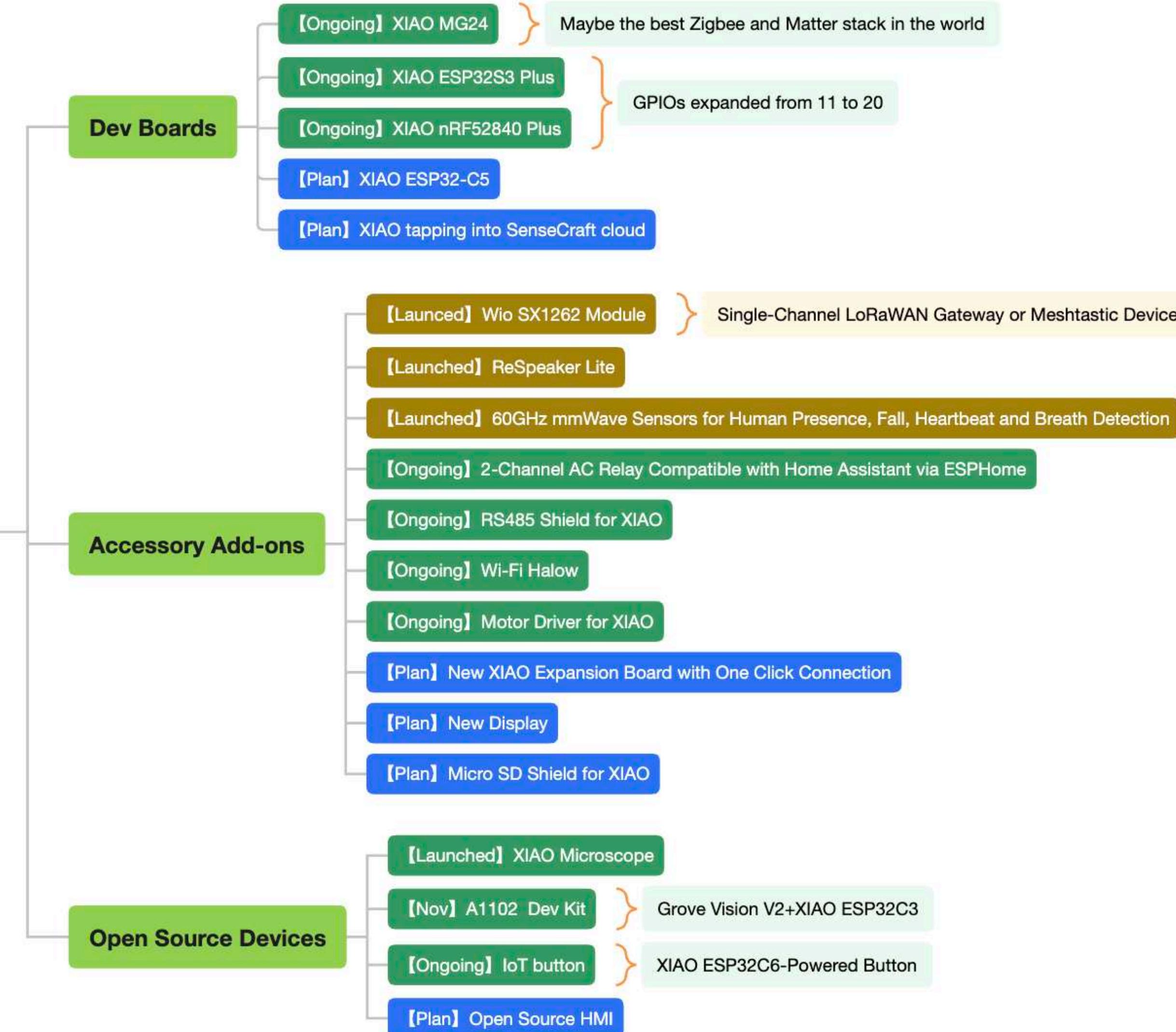
LinuxGizmos.com

TECHEBLOG 澎湃

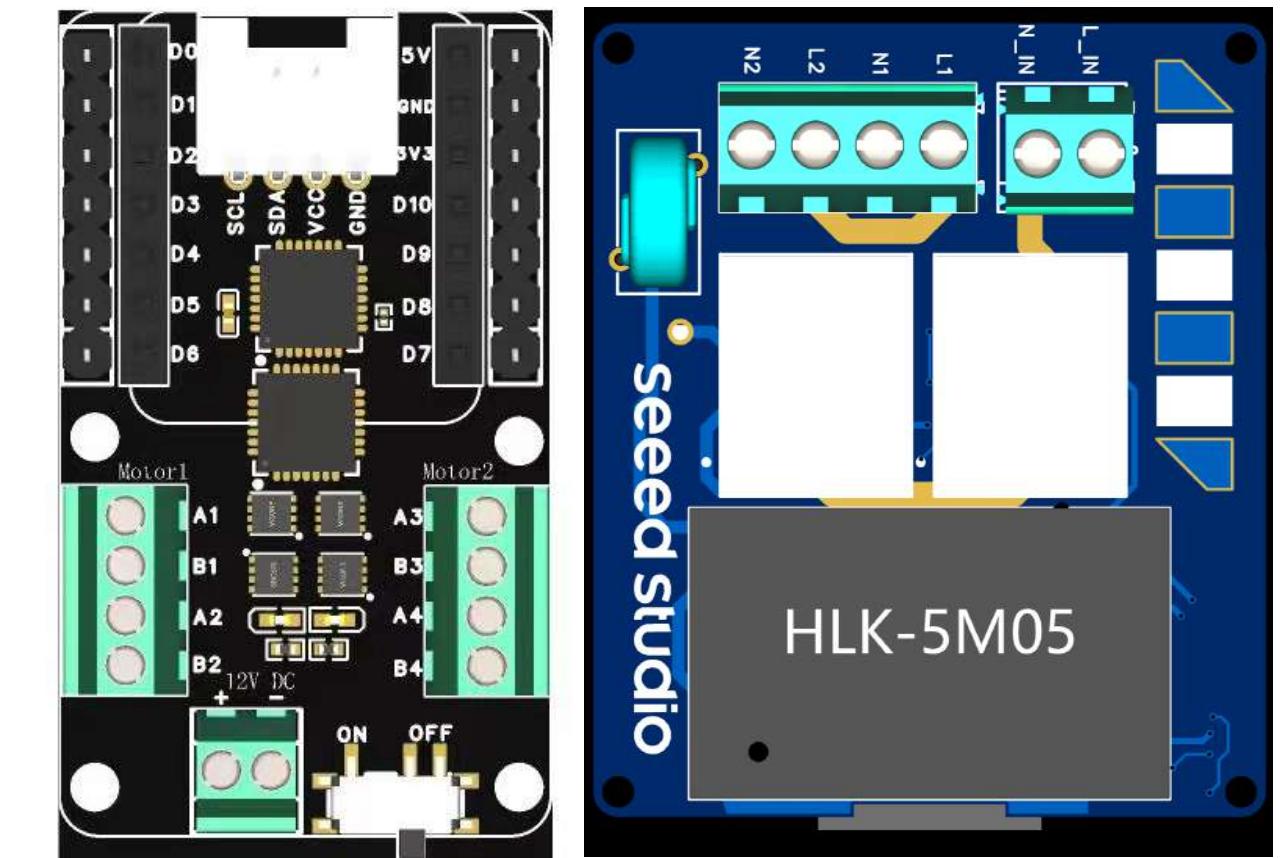


Seeed Studio XIAO Roadmap

Seeed Studio XIAO Roadmap 24-25



XIAO ESP32S3 Plus XIAO nRF52840 Plus



Motor Driver

2-Channel AC Relay



OpenUC2 10X AI Microscope



seeed studio

XIAO Open Roadmap

You Decide What We Build Next

Developer, join to shape the next XIAO with us!



Join Now



Seeed Studio XIAO Open Roadmap

Roadmap of Seeed XIAO: You Decide What We Build Next!

Waiting List · limengdu

Q is:open Sort by: Latest activity Label Filter: Open New discussion

Categories

- View all discussions
- Accomplished
- Help Needed
- In Development
- Open for Vote
- Waiting List

Most helpful

Be sure to mark someone's comment as an answer if it helps you resolve your question — they deserve the credit! ❤️

Community guidelines Community insights

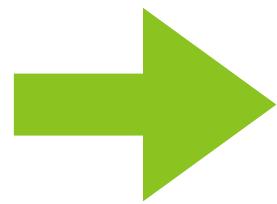
Discussions

- XIAO RP2040/RP2350 WITH WIFI MODULE usermtech started 3 days ago in Waiting List
- NEW XIAO ADD-ON WITH SENSORS usermtech started 3 days ago in Waiting List
- Roadmap of Seeed XIAO: You Decide What We Build Next! limengdu started on May 24 in Waiting List
- New LoRa Model for XIAO XIAO Accessories kevin-seed started on Jul 4 in Open for Vote
- A 6 channel relay box with XIAO 256ericpan started on May 31 in Open for Vote
- More I/Os on Seed's XIAO Open for Vote Seed Roadmap XIAO Boards limengdu announced on May 24 in In Development
- M3 screw in adapter for xiao , best for 3d printed non PCB projects XIAO Accessories gokuxmaker started on Jun 22 in Waiting List
- Upgrade BLE to 5.2+ for audio support Thrasher0831 started on Jul 1 in Waiting List
- New Meshstastic gadgets XIAO Accessories kevin-seed started on Jul 5 in Open for Vote
- Affordable programmer-debugger probe by Seeed Open for Vote XIAO Boards rei-wilo started on Jul 29 in Open for Vote
- An cheap voice recognition addon module 256ericpan started on Jul 23 in Open for Vote
- Example Board for Revision to XIAO CWGwaitney started on Jul 17 in Waiting List
- XIAO HMI with display, camera, microphone and speaker kevin-seed started on May 27 in Open for Vote
- An Infrared addon board to remote control legacy appliances. 256ericpan started on Jul 11 in Open for Vote
- ESPhome examples and configuration entry for Xiao based gadgets 256ericpan started on Jul 2 in Open for Vote
- Create Fritzing Parts for Seeed XIAO MCUs Community's Wishes Software Dev melli announced on May 27 in Accomplished
- Zephyr Support for XIAO ESP32C6 XIAO Boards Software Dev melli asked on Jun 4 in Help Needed - Unanswered
- A plug and play XIAO spring connector Open for Vote XIAO Accessories kevin-seed announced on May 27 in In Development
- XIAO based on RA4M1(Arduino R4) Open for Vote XIAO Boards kevin-seed started on May 27 in Open for Vote
- Connect XIAO to Cloud (SenseCraft Data platform) Software Dev kevin-seed started on May 27 in Open for Vote

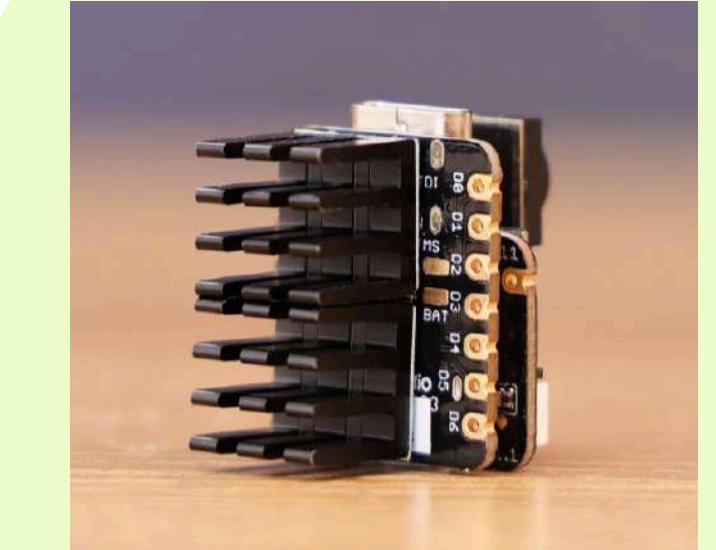
Products Realised by the Community Power



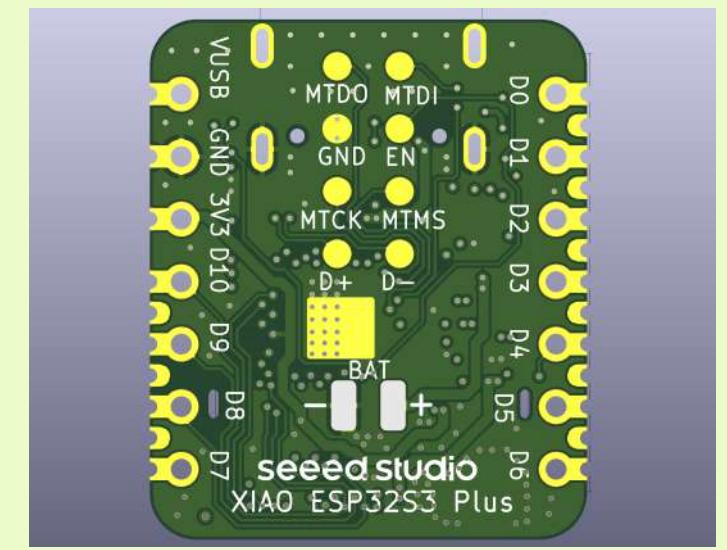
Seeed Studio XIAO 3PCS Pack



Seeed Studio
XIAO All Available
in Pre-Soldered



Heatsink for
XIAO ESP32S3
Sense



Seeed Studio
XIAO Plus with
more IOs

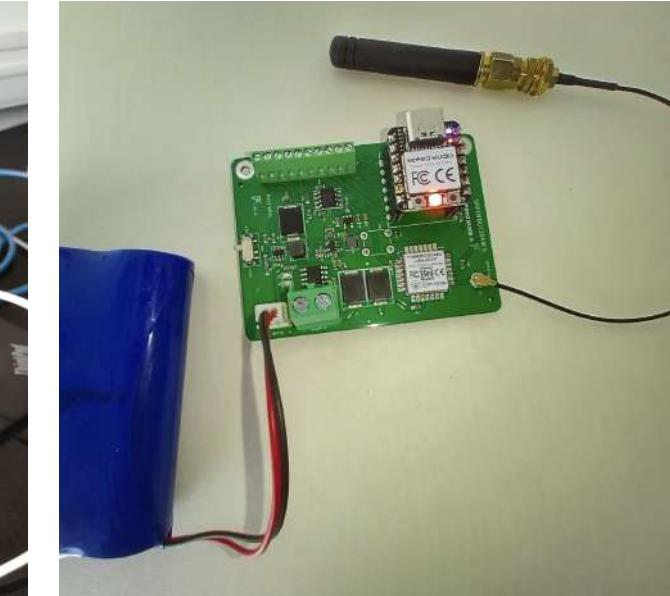


Co-Create with Seeed Studio XIAO

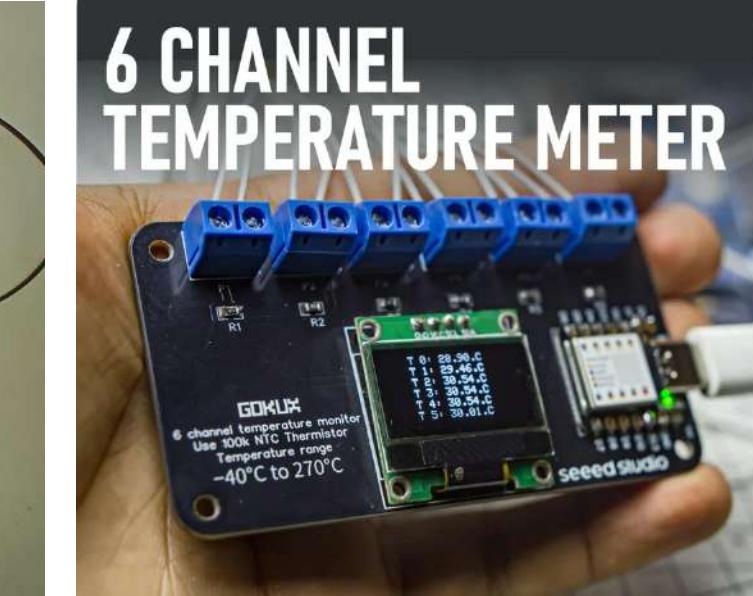
Design and scale up custom XIAO-based projects from scratch with Seeed Fusion Co-Create Services of **prototyping, production and promotion.**



[OpenUC2 10x AI
Microscope - Powered by
Seeed Studio XIAO
ESP32S3 Sense](#)



[Green Dot Board By
Collins Emasi](#)



[6 Channel Temperature
Meter By Gokul](#)

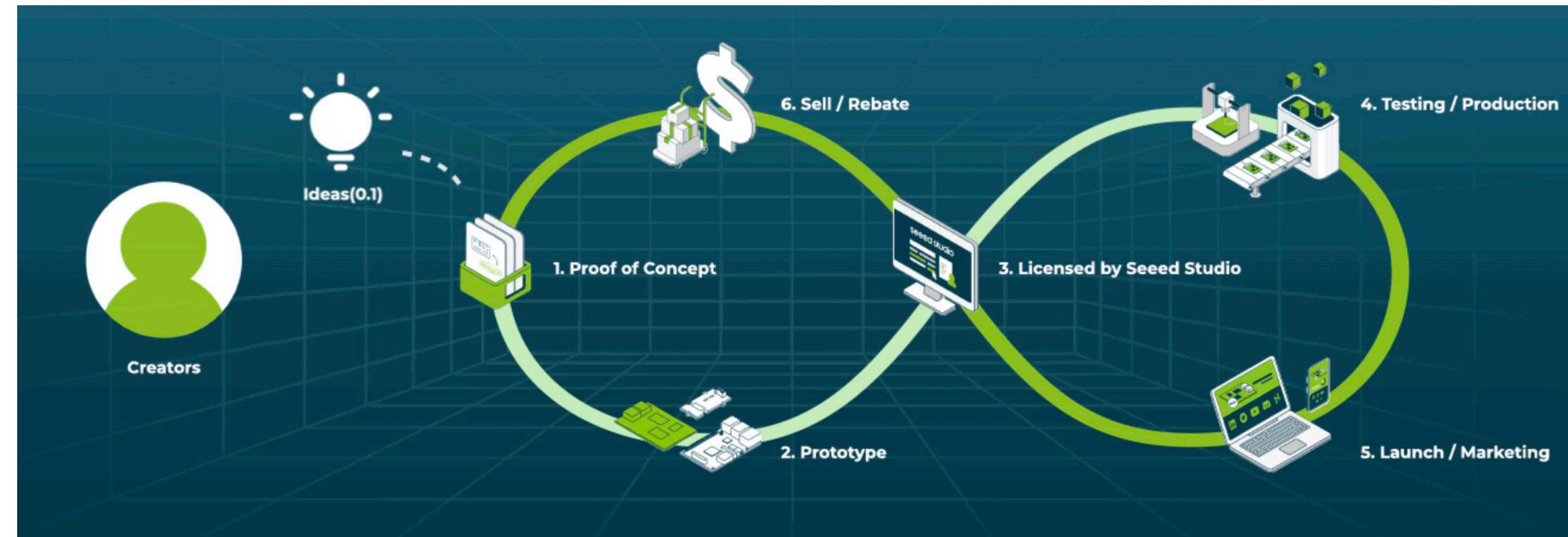


[Fusion DIY XIAO
Mechanical Keyboards](#)



[Seeed Studio XIAO
Reference Design](#)

- **FREE prototyping sponsorship** for XIAO-based PCBA design fabrication
- Licensing outstanding designs for sale where the designer **receives license fee for each piece sold.**





Seeed Studio XIAO Resources

- **Landing Page:** www.seeedstudio.com/xiao
- **Wiki Tutorials and Documents:** wiki.seeedstudio.com/xiao_topic_page/
- **Seeed Studio XIAO Video:** www.youtube.com/watch?v=A_XUi8tIKWk
- **Media Pack (High-Res Photos, Flyers & more):** https://drive.google.com/drive/folders/1toCZJ4_tPTey9UOa2ORRGOEyHcHszqy?usp=sharing
- **Community Projects:**
 - Hackster: <https://www.hackster.io/search?q=XIAO&i=projects>
 - Hackaday: <https://hackaday.io/search?term=seeed+xiao>
 - Instructables: <https://www.instructables.com/search/?q=Seeed+XIAO&projects=all>
 - GitHub: <https://github.com/search?q=seeed+xiao&type=repositories>
- **YouTube Reviews:** https://www.youtube.com/watch?v=A_XUi8tIKWk&list=PLpH_4mf13-A2_SITxyhgSbVsq-TQDb_m



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Thank You!

For more inquiries: maker@seeed.cc

