tiny ML. Talks

Enabling Ultra-low Power Machine Learning at the Edge

"Edge ML Developer Day"

Jared Makario - Networks For Learning Africa
Robert John - Versus
Clinton Oduor - Edge Impulse
Wei Xiao - Nvidia
July 16, 2022







Thank you, tinyML Strategic Partners*, for committing to take tinyML to the next Level, together























































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Executive Strategic Partners

arm Al



















Arm Al Virtual Tech Talks

The latest in AI trends, technologies & best practices from Arm and our Ecosystem Partners.

Demos, code examples, workshops, panel sessions and much more!

Fortnightly Tuesday @ 4pm GMT/8am PT

Find out more: www.arm.com/techtalks





The Leading Development Platform for Edge ML

edgeimpulse.com

Qualcomm Al research

Advancing Al research to make efficient Al ubiquitous

Power efficiency

Model design, compression, quantization, algorithms, efficient hardware, software tool

Personalization

Continuous learning, contextual, always-on, privacy-preserved, distributed learning

Efficient learning

Robust learning through minimal data, unsupervised learning, on-device learning

A platform to scale Al across the industry



Perception

Object detection, speech recognition, contextual fusion

Reasoning



Edge cloud





Cloud





IoT/IIoT











Platinum Strategic Partners

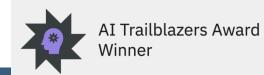






Fastest Video Analytics Solutions on Arm CPUs











High-Value or Safety-Critical Use Cases?

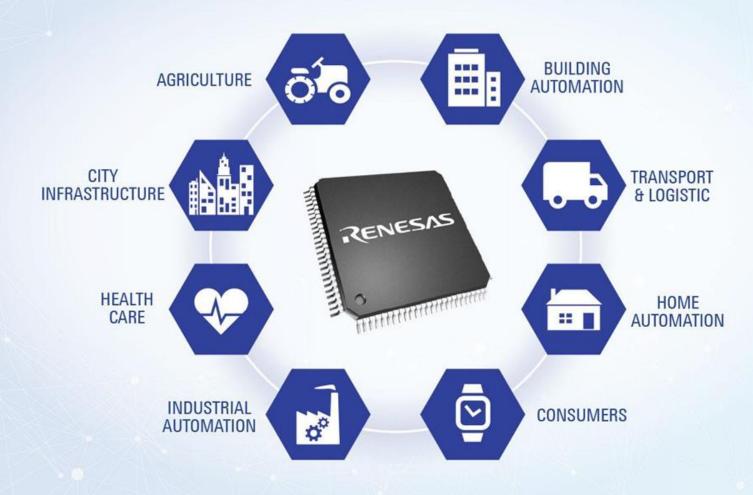
For your most important projects, use



TinyML software that covers the full engineering lifecycle: Reality AI Tools®

- AutoML for non-visual sensing based on advanced signal processing math
- Hardware design analytics
- Explanation of TinyML models in terms of underlying physics
- Automated Data Readiness assessment

Renesas is enabling the next generation of Al-powered solutions that will revolutionize every industry sector.



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Gold Strategic Partners





Where what if becomes what is.

Witness potential made possible at analog.com.

FOTAHUB

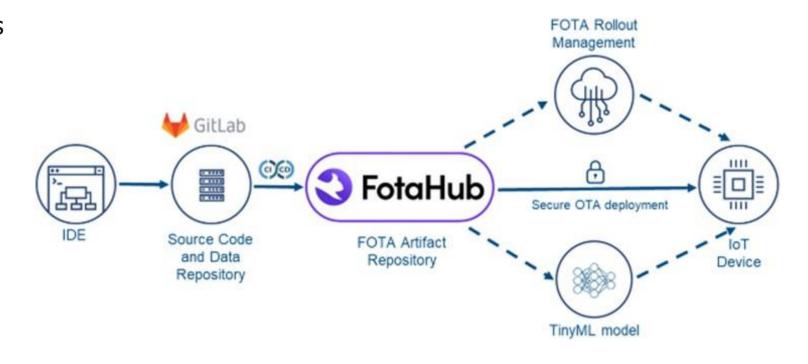
Making Over-the-Air Firmware and ML models Updates Simple and Accessible!

- Securely update your IoT devices regardless of their Hardware Platform (Silicon) Provider and physical location.
- Unlock TinyML business value through OTA Firmware and ML models update.
- Pay-as you-go

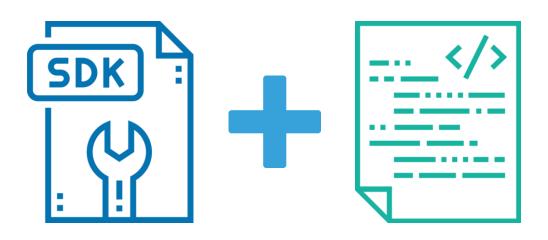


contact@fotahub.com









The Latent AI Efficient Inference PlatformTM (LEIP) combined with application templates makes optimizing neural networks for production inference a cinch.

THE EASY BUTTON FOR DEVELOPERS resulting in faster time to market.

Reach out to info@latentai.com





TOGETHER, WE ACCELERATE THE BREAKTHROUGHS THAT ADVANCE OUR WORLD

www.nxp.com/ai



Deploy TinyML into the Real World - Plug and Play ML



Sensors:

- modulated and ready-to-use sensors to simplify the setup process
- support 500+ grove modules





Wio Terminal:

completed AI platform --integrated with a 2.4" LCD
 Screen, onboard IMU (LIS3DHTR),
microphone, buzzer, microSD
card slot, light sensor, infrared
emitter(IR 940nm)



Codecraft:

- no code Programming platform to Get Started With TinML
- · supports Arduino, Python, C or JavaScript etc.



Edge Impulse:

 to optimize data utilization and enable deploy a machine learning model faster than ever



TensorFlow Lite:

 to easily train low memory usage machine learning models



Motion /Gesture/Speech /Smell/ Sports Barcode/Face/Image



Artificial Nose

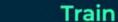


Al Thermal Camera for Safe Camping



Azure IoT Squirrel Feeder

Applications



Inference

The Right Edge Al Touls Can Make Break Your Next Smart IoT Product





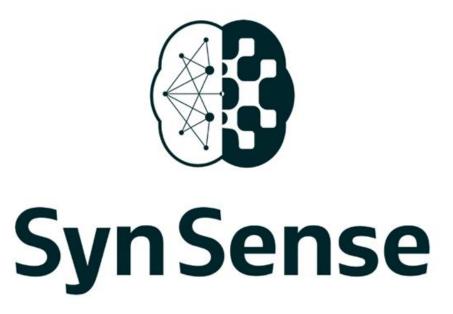


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SynSense builds **sensing and inference** hardware for **ultra-low-power** (sub-mW) **embedded, mobile and edge** devices. We design systems for **real-time always-on smart sensing**, for audio, vision, IMUs, bio-signals and more.

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tinyML EMEA Innovation Forum 2022

Connect, Unify, and Grow the tinyML EMEA Community
October 10-12, 2022

https://www.tinyml.org/event/emea-2022

Event will be held in person in Cyprus.

EMEA 2022 Call for Presentations is open till August 1st, 2022.

More sponsorships are available: sponsorships@tinyML.org





Our next tinyML Trailblazers Series

Success Stories with Vijay Janapa Reddi (Associate Professor, Harvard University)

LIVE ONLINE August 3rd, 2022 at 8 am PDT



Register now!





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10.3k members in45 Groups in 36 Countries

tinyML - Enabling ultra-low Power ML at the Edge

https://www.meetup.com/tinyML-Enabling-ultra-low-Power-ML-at-the-Edge/





2.9k members & 7.9k followers

The tinyML Community

https://www.linkedin.com/groups/13694488/









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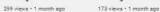
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Next tinyML Talks

Date	Presenter	Topic / Title
Thursday, July 21	Archana Vaidheeswaran, Data Scientist, DHL Express	Introduction to ScaleDown: An Open Source Initiative

Webcast start time is 5:30 am Pacific time

Please contact talks@tinyml.org if you are interested in presenting





Reminders

Slides & Videos will be posted tomorrow



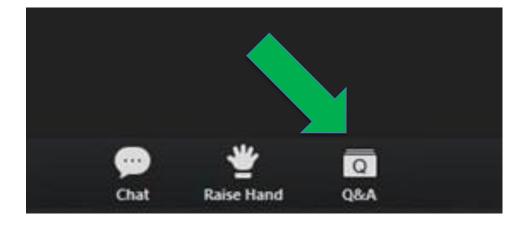


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Please use the Q&A window for your questions







Jared Makario



Jared Makario is an outgoing and passionate Electrical & Electronics Engineer interested in Data science, Artificial Intelligence (AI), Machine learning (ML), Internet of Things (IoT), Renewable energy, Sustainable Agriculture, Data science infrastructures and embedded systems. In addition, he has gained skills and knowledge working in companies and teams operating in those fields.





Robert John



Robert John is a software engineer turned Data Engineer. He is currently a Google Cloud Certified Professional Data Engineer. He optimizes data ingestion, processing, storage, and retrieval. Also trains Machine Learning (ML)models and put them into production. Because training models require data analysis, he sometimes visualizes and tells data stories. He is currently training Natural Language Processing (NLP) models to predict sentiment on tweets and news articles from Nigeria.





Clinton Oduor



Clinton Oduor is a Co-founder at Rhions Lab, a startup that designs state of art technology to solve Human-wildlife conflicts, illegal wildlife trafficking, and poaching using AI & IoT. Currently finalizing his bachelor's degree in Electrical and Electronics Engineering at the Dedan Kimathi University of Technology, he is also an Edge Impulse ambassador and community Co-organizer of TinyML Kenya.





Wei Xiao



Wei Xiao is working on expanding Nvidia's AI footprint in emerging markets and emerging technologies. Wei has a breadth of expertise in Applied AI, IoT and Mobile. Prior to Nvidia, Wei was leading the AI evangelism activities at Arm, driving the success of Arm ML hardware and software penetration through technical partnerships and community engagements. Wei was a part of the tinyML Global meetup committee and Asia 2020 technical program committee. She is a passionate advocate of tinyML and will continue nurturing its growth in her domain.



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