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Engagement

Author: tariq.ahmad
12830 views

Attendees

Total Confirmed Attendees: 594

leven
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cavalhno
shömik
rajpelvakumar
rooroo
glorfindel
edcerri
cmiranda03

1 2 3 4 5

This event occurred in the past.

Introduction to TinyML by Edge Impulse (Featuring Arduino Nano Sense 33)

Watch On-Demand

When

16 Dec 2020 11:00 AM to 12:00 PM Central Time (US & Canada)

Where

On24

Event Type

6 (On24)

EDGE IMPULSE

Forget weeks or days. You can now start your embedded machine learning journey in minutes!

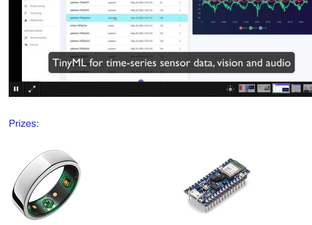
Join Jenny Plunkett for an Introduction to TinyML using Edge Impulse. Edge Impulse enables developers to create the next generation of intelligent device solutions with embedded Machine Learning. Machine Learning at the very edge will enable valuable use of the 99% of sensor data that is discarded today due to cost, bandwidth, or power constraints. Edge Impulse enables the easy collection of real-sensor data, live signal processing from raw data to neural networks, testing and deployment to any target device. You can sign up for a free developer account and get started with the ST IoT Discovery board or the Arduino Nano Sense 33. Then open source SDKs allow you to collect data from or deploy code to any device. TinyML enables exciting applications on extremely low-power MCUs. For example, you can detect human motion from just 10 minutes of training data, detect human keywords and classify audio patterns from the environment in real-time.

The presentation will include a live demo using the Arduino Nano 33 for ML in minutes, not days! This will be followed by a Q&A session.

TinyML is opening up incredible new applications for sensors on embedded devices, from predictive maintenance to health applications using vibration, audio, biosignals and much more! This webinar introduces why ML is useful to unleash meaningful information from that data, how this works in practice from signal processing to neural networks, and walks the audience through hands-on examples of gesture and audio recognition using Edge Impulse.

What you will learn by attending:

- Overview of embedded design and the role of TinyML in neural networks
- Introduction to the Edge Impulse Studio and TinyML development
- Live demo using the Arduino Nano 33 BLE - ML in minutes, not days!
- Q&A



Prizes:

Simply register for the webinar for a chance to win an Oura Ring. One attendee will be chosen at random to receive an Ora Ring!

Buy Now

We will be sending out a limited number of Arduino Nano Sense 33 boards for asking the best questions during the presentation!

The Presenter:

Jenny Plunkett, User Success Engineer at Edge Impulse

Texas Longhorn and software engineer, working as a User Success Engineer at Edge Impulse. Since graduating from The University of Texas I have been working in the IoT space, from customer engineering and developer support for Arm Mbed to consulting engineering for the Pelion platform.

Daniel Situnayake, Founding TinyML Engineer at Edge Impulse

I'm a founder, an engineer, a teacher and a communicator. I currently work at Edge Impulse as Founding TinyML Engineer. I'm a co-author of the book "TinyML: Machine Learning with TensorFlow Lite on Arduino and Ultra-Low-Power Microcontrollers", published by O'Reilly.

I previously worked at Google as a Developer Advocate for TensorFlow Lite, enabling developers to deploy machine learning to edge devices, from phones to SoCs. I was also Developer Advocate for Dialogflow, a tool for building conversational AI.

tinyml machine learning ai edge impulse ai arm recording_available arduino

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lahmad78 — 36 comments, 3 members are here

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Top Comments

tariq.ahmad *over 4 years ago* +12

Congratulations to hillary66 ! You are the winner of the Oura ring! Congratulations to gustavovelascoh , 14rhb , clickvik , redcharly , gordonmx , sara_k_olsson , vlasov01 , and gooider ! You are the winners...

shabaz *over 4 years ago* +11

Edge Impulse are doing great stuff. Excited about this presentation :)

shabaz *over 4 years ago* +11

The presentation was so useful, I thought I'd give it a go using the mobile phone just now... see if it really is that easy. And it really is just a five-minute job! I decided to use microphone data from...

Oldest Best Newest

tariq.ahmad *over 4 years ago*

Congratulations to hillary66 ! You are the winner of the Oura ring!

Congratulations to gustavovelascoh , 14rhb , clickvik ,redcharly , gordonmx , sara_k_olsson , vlasov01 , and gooider! You are the winners of the Nano Sense 33 boards.

We will be posting Q&A responses shortly.

redcharly *over 4 years ago in reply to tariq.ahmad*

Congratulations to hillary66 and to the other winners.

I can't wait to try some AI applications, thanks to Tariq, and thanks to Jenny and Daniel who were very clear and very helpful during the webinar.

Thanks to everyone at element14.com for the pleasant time you make me spend on the site and for the continuous inspiration.

Carlo

gordonmx *over 4 years ago in reply to tariq.ahmad*

Thank you for the great news. I can't wait to try a few ideas.

Stay Safe & Well, Gordon

hillary66 *over 4 years ago in reply to tariq.ahmad*

Hi Team,

it is a big surprise for me.

I will use this amazing gift for check and improve my health.

Thank you again.

Grazie mille.....

sandeepdelivered17 *over 4 years ago in reply to tariq.ahmad*

Congrats to all Winners

vlasov01 *over 4 years ago in reply to tariq.ahmad*

Thank you! It is a very welcome surprise for me!

View More

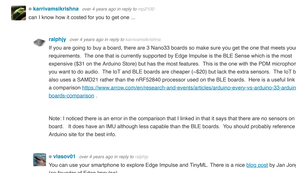
shabaz *over 4 years ago*

Edge Impulse are doing great stuff. Excited about this presentation :)

shabaz *over 4 years ago*

The presentation was so useful, I thought I'd give it a go using the mobile phone just now... see if it really is that easy. And it really is just a five-minute job!

I decided to use microphone data from the mobile. Admittedly I only trained it with a few samples (four per label) so the final result had a low probability of success, but nevertheless at least it was straightforward to do all this!


EDGE IMPULSE
Training set
Training settings
Start training
Neural Network settings
Training cycles 100
Learning rate 0.005
Validation set size 20%
Neural network architecture
Input layer (660 features)
Reshape layer (1 x 660 x 1)
Conv1D / Pooling (8 layers)
Flatten layer
Dropout (0.25)
Dense layer (16 neurons)
Dropout (0.25)
Dense layer (4 neurons)
Output layer (4 features)
Start training
Training output
Scheduled job in queue (estimated start in 2 minutes)
Starting job in remote mode
Ingesting 1 files
Ingesting 1 files
Ingesting 1 files