Launching TinyML edX and Long Term Support

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1. **Why** TinyML on edX?
2. The **Development** Process and Lessons Learned
3. **Long Term** Support Successes and Challenges
Why TinyML on edX?
Setting the Context

Late Spring 2020
Setting the Context

Let’s Teach a Course on TinyML

CS249r: Tiny Machine Learning
Applied Machine Learning for Embedded IoT Devices
Setting the Context

Can we broaden access to our course?

Why not work with us?
The Development Process and Lessons Learned
Why is an edX Course Different?

1. Students are both **More and Less** Experienced

2. Increased Challenge of “Chunking” to Preserve Learner Attention

3. Inability to Directly Support all Learners Especially with IT
The Development Process

1. Course Design
   - Domain Expert Interviews
   - Module Topic Outlines
   - Pedagogical Overlay and “Chunking”

2. Content Development
   - Distributed Development
   - Content Smoothing
   - Formatting and Slide Development

3. Production
   - Copyright Analysis
   - Video Recordings
   - Content Uploads
   - Creative Team Post-Processing
   - Final Reviews
Key Lessons Learned

**Simplify the Barriers to Entry**
To attract students (Colab + Low-Cost Kit)

**Real-World Hands-On**
Applications to retain learners

**Large Teams of Diverse Experts**
Are needed for fast timelines (Content + Formatting + Platform)

**Industry Collaborations**
Are vital (Google, ARM, Arduino)

**Process Matters**
Collocation does not

**Less is More**

**Hardware is Hard**
Long Term Support
Successes and Challenges
Long Term Support Successes and Challenges

1. Videos Can’t be Changed (Easily)
2. Future Proofing by Design
3. Prepare for Surprises
4. Plan for Who Does the Support

- Videos as Background and Fundamentals.
- Code and Hands-On pegged to Specific Versions of OSS but prepare for the version to No Longer Work!
- 2 Year Support can be You – 5+ years needs a Transition Plan!
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