Best Practices for Open Training Materials in TinyML

Marcus Rüb
Best Practices for Open Training Materials

01 Importance
Importance of open training materials

02 Best Practices
Best Practices for Open Training Materials (in TinyML)

03 Examples
Some examples of good courses

04 Call for Action
Let's make something great!
Best Practices for Open Training Materials

01 Importance
Importance of open training materials

02 Best Practices
Best Practices for Open Training Materials (in TinyML)

03 Examples
Some examples of good courses

04 Call for Action
Let’s make something great!
Accessibility and divisibility

- More people have access to learning resources.
- Materials can be shared across different platforms and channels.
Collaboration and community building

- Promote collaborative learning and knowledge sharing.
- Empowering the TinyML community through collective growth.
Updatable and adaptability

- Materials can be continuously updated and improved.
- Adaptation to different learning needs and levels.
Cost savings

• Reduction of expenditure on training materials.
• Free availability makes it possible to use resources elsewhere.
Best Practices for Open Training Materials

01 Importance
Importance of open training materials

02 Best Practices
Best Practices for Open Training Materials (in TinyML)

03 Examples
Some examples of good courses

04 Call for Action
Let’s make something great!
Interactivity and practical relevance

• Integration of exercises and practical projects
• Provision of code examples and demo applications
• Ways to interact with the community
Modularity and structuring

• Breakdown into thematic modules
• Clearly defined learning objectives
• Logical progression of content
Up-to-dateness and relevance

- Continuous updating of materials
- Consideration of current developments and technologies
Clarity and comprehensibility

• Avoidance of technical jargon
• Use of illustrative examples
• Step-by-step instructions

[Image: Person saying, “don't worry about it if you don't understand”]
Support and feedback

• Provision of support channels (forums, e-mail, chat)
• Encouragement for feedback and improvement of materials
Best Practices for Open Training Materials

01 Importance
Importance of open training materials

02 Best Practices
Best Practices for Open Training Materials (in TinyML)

03 Examples
Some examples of good courses

04 Call for Action
Let’s make something great!
Professional Certificate in Tiny Machine Learning (TinyML)

HarvardX

What you will learn

- Fundamentals of machine learning, deep learning, and embedded devices.
- How to gather data effectively for training machine learning models.
- How to use Python to train and deploy tiny machine learning models.
- How to optimize machine learning models for resource-constrained devices.
- How to conceive and design your own tiny machine learning application.

Expert instruction
- 3 skill-building courses

Self-paced
- Progress at your own speed

4 months
- 2 - 4 hours per week
Introduction to Embedded Machine Learning

4.8  526 Bewertungen  |  96 %

Kostenlos anmelden
Beginnt am 3. Juli

32.417 bereits angemeldet
TinyML and Efficient Deep Learning Computing

6.S965 • Fall 2022 • MIT

Have you found it difficult to deploy neural networks on resource-constrained hardware? Have you ever found it too slow to train neural networks? This course is a deep dive into efficient machine learning techniques that enable powerful deep learning applications on resource-constrained devices. Topics cover efficient inference techniques, including model compression, pruning, quantization, neural architecture search, and distillation; and efficient training techniques, including distributed training, gradient compression and on-device transfer learning; followed by application-specific model optimization techniques for video, point cloud, generative model, NLP and LLM; it will cover futuristic research on quantum machine learning. Students will get hands-on experience implementing deep learning applications on mobile devices with an open-ended design project related to efficient AI computing.
Best Practices for Open Training Materials

01 Importance
Importance of open training materials

02 Best Practices
Best Practices for Open Training Materials (in TinyML)

03 Examples
Some examples of good courses

04 Call for Action
Let’s make something great!
CALL TO ACTION

https://tinyml.seas.harvard.edu/courses/