Call for Papers
tinyML Research Symposium 2021

Monday, March 22, 2021

*New academic & industrial research symposium as part of the **tinyML Summit 2021***
A Call for Presentations and Posters for the Summit are also being solicited.
All events will be held at the Hyatt Regency, Burlingame, CA

Program Chairs
Vijay Janapa-Reddi, Harvard Univ.
Boris Murmann, Stanford Univ.

Program Committee
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Vikas Chandra, Facebook
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Dennis Sylvester, Univ. of Michigan
Jonathan Tapson, GrAI Matter Labs
Marian Verhelst, KU Leuven, Belgium
Pete Warden, Google
Hoi-Jun Yoo, KAIST

Publicity Chair
Theocharis Theocharides, Univ. of Cyprus

Important Deadlines
Papers Due: Nov 23rd, 2020
Author Notification: Jan 15th, 2021
Camera Ready: Feb 15th, 2021

Submission Page Limit
6 - 8 pages

Submission Website
OpenReview

Paper Template
ACM

Tiny machine learning (tinyML) is a fast-growing field of machine learning technologies and applications including algorithms, hardware, and software capable of performing on-device sensor (vision, audio, IMU, biomedical, etc.) data analytics at extremely low power, typically in the mW range and below, and hence enabling a variety of always-on use-cases and targeting battery-operated devices. tinyML systems are becoming "good enough" for (i) many commercial applications and new systems on the horizon; (ii) significant progress is being made on algorithms, networks, and models down to 100 kB and below; and (iii) initial low power applications in vision and audio are becoming mainstream and commercially available. There is growing momentum demonstrated by technical progress and ecosystem development. The first annual tinyML research symposium serves as a flagship venue for research at the intersection of machine learning applications, algorithms, software, and hardware in deeply embedded machine learning systems. We solicit papers from academia and industry combining cross-layer innovations across topics. Submissions must describe tinyML innovations that intersect and leverage synergy between at least two of the following subject areas:

tinyML Datasets
- Public release of new datasets to tinyML
- Frameworks that automate dataset development
- Survey and analysis of existing tiny datasets that can be used for research

tinyML Applications
- Novel applications across all fields and emerging use cases
- Discussions about real-world use cases
- User behavior and system-user interaction
- Survey on practical experiences

tinyML Algorithms
- Federated learning or stream-based active learning methods
- Deep learning and traditional machine learning algorithms
- Pruning, quantization, optimization methods
- Security and privacy implications

tinyML Systems
- Profiling tools for measuring and characterizing system performance and power
- Solutions that involve hardware and software co-design
- Characterization of tiny real-world embedded systems
- In-sensor processing, design, and implementation

tinyML Software
- Interpreters and code generator frameworks for tiny systems
- Optimizations for efficient execution
- Software memory optimizations
- Neural architecture search methods

tinyML Hardware
- Power management, reliability, security, performance
- Circuit and architecture design
- Ultra-low-power memory system design
- MCU and accelerator architecture design and evaluation

tinyML Evaluation
- Measurement tools and techniques
- Benchmark creation, assessment and validation
- Evaluation and measurement of real production systems

Accepted papers will be published in the form of peer-reviewed online proceedings. An author of an accepted paper must attend the research symposium to give a presentation.