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Dear NeurIPS AI Education Showcase Committee,

We are excited to share this submission on the AI and Edge AI module under our *AHA (AI Hardware Adventures)* NSF-funded project. This immersive, hands-on experience invites learners and educators to explore the nuances of artificial intelligence through embedded systems and real-world sensing. It is part of a larger mission to reimagine what AI is, who gets to learn, build, and lead in AI, and how we support them on that journey.

What makes our work unique is its seamless integration of hardware and software within AI education. At the heart of the experience is the AHA board™, a sensor-rich, home-built, and affordable AI Internet of Things (AIoT) platform. Through this device, **learners engage with AI not as an abstract concept, but as a tangible system they can see, touch, and manipulate.** This approach allows us to challenge misconceptions such as the belief that AI has to involve chatbots, and instead invite learners to explore how edge AI can power community-centered, engaged engineering. Edge AI refers to the use of AI directly on devices that operate at the edge of networks, allowing data to be processed locally rather than sent to the cloud. Learners in our program are encouraged to design solutions that reflect their values and local concerns, while gaining foundational skills in AI model development, and ethical decision making.

Our showcase submission includes two demonstrative materials: a **five-minute animated video** and a **curriculum module that takes approximately ten minutes to explore.** These materials are designed for middle and high school students, but can be used with undergraduate learners from all fields, and educators across the K-20 spectrum. **Our resources demystify AI making it relevant to educators, researchers and policymakers who are shaping the future of AI education.** The video introduces the AHA board™ and demonstrates how data can be collected, processed, and used to generate intelligent responses. Projects such as a light-sensitive color detection or a heart-rate monitoring wearable exemplify how Edge AI becomes personal and practical. The open-sourced curriculum builds on these ideas through guided experiments, model training using Edge Impulse™, and open-ended design prompts.

By making AI local, tangible, and personally meaningful, we aim to nurture not only technical fluency but also a deep sense of creativity, confidence, and purpose in the next generation of engineers. Thank you for the opportunity to share this work with the NeurIPS community. We are honored to contribute to a more comprehensive and inspiring vision for AI education.

Sincerely,

Andrea Ramirez-Salgado on behalf of the AHA Team ([NSF Grant #2405373](#))

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