ViewSonic is collaborating with Intel to implement AI and deep learning solutions as part of its myViewBoard* software ecosystem. Geared specifically for educators, myViewBoard is integrating with the Intel® Distribution of OpenVINO™ toolkit to add facial-expression recognition and mood indexing to better respond to learners' needs based on non-verbal cues. This innovation means educators will be able to better collect feedback and adjust to learners' needs, both individually and as a group.

**Challenge**

As technology evolves, education evolves with it. While the education sector may not be able to always keep pace with the most recent advances, the purpose of education is to prepare learners of all ages for the future. It's essential that the smart classroom use the latest technologies to meet modern students' needs.

Educators face a number of challenges that can be addressed through the correct application of EdTech:

- **Creating engaging** learning materials
- **Presenting lessons** in a way that grabs and holds learners' attention
- **Encouraging learners' participation** in lessons
- **Improving retention**, understanding, and functional knowledge
- **Managing learning environments** for optimal performance
- **Responding to learners' needs** on an individual level

However, correctly implementing technology is a challenge. Learning is still a very human process, so even technological solutions need a personal touch. Ideally, technology should engage with users on a personal—and even an emotional—level. And continuing advances in artificial intelligence, deep learning, and educational technology are on the verge of providing a very technical solution to very human challenges.

**Solution**

ViewSonic is rising to the challenges modern educators face by developing a seamlessly integrated hardware and software solution using the Intel Distribution of OpenVINO toolkit, giving ViewSonic's technological solutions a unique human touch.

**The Hardware Solution: ViewBoard***

ViewSonic's front-of-class interactive display, ViewBoard*, gives teachers and students an advanced, multi-touch, interactive whiteboard that can integrate with existing technology or provide a standalone solution.
Educators can engage with learners with media-rich content on crystal-clear displays that work in any environment. Compatible with VESA* interface standards, the design allows the ViewBoard to be installed on either a wall-mount or portable trolley. The ViewBoard has an Android* 7.0 operating system built in; however, with the powered slot-in PC option from Intel, the device becomes a much more powerful all-in-one teaching and engaging platform.

**Features at a Glance**

- **Ultra-fine touch technology** with enhanced latency reduction
- **20-point touch** with hand or stylus inputs
- **Dual-tip** pen support
- **Immersive stereo** via 10W stereo speakers and 15W subwoofer
- **ViewBoard Cast** content sharing software
- **Smartport USB** for continuous access to front-facing USB ports
- **4K Ultra HD** models
- **Built-in Android 7.0** operating system
- **ENERGY STAR** certification
- **Dedicated** camera port
- **Multiple** HDMI and USB ports

Learn more about how educators are using the ViewBoard digital whiteboard here.

**The Software Solution: myViewBoard**

myViewBoard by ViewSonic is an agnostic software ecosystem that allows educators to prepare engaging learning materials, present lessons with embedded media and annotation, and facilitate learner participation on practically any device.

**Benefits to Educators and Learners**

- **Prepare lessons ahead of time** and save to your preferred cloud storage service.
- **Drag and drop media** into learning materials even during presentation.
- **Throw and cast media** to and from any connected device.
- **Annotate or alter lessons and media live** on the super-smooth touch interface.
- **Record and save lessons** to existing cloud storage for easy sharing and review.
- **Recognize and adapt to students’ emotional states** with the Intel Distribution of OpenVINO toolkit integration

**The Human Solution: Emotion Recognition Using the Intel Distribution of OpenVINO Toolkit**

Integration between the myViewBoard ecosystem and the Intel Distribution of OpenVINO toolkit results in a unique, real-time feedback system. The comprehensive toolkit makes it possible for myViewBoard to assess and display the emotional states of learners as immediate feedback for educators.

Privacy is maintained on all data transmitted to the cloud for analysis thanks to anonymous encryption. Mood recognition happens without ever being linked to a person’s identity, eliminating one of the major barriers to widespread adoption.

Based on convolutional neural networks (CNNs), the Intel Distribution of OpenVINO toolkit allows applications and solutions to emulate human vision at both the sensory and processing levels. Specifically, the toolkit supports facial expression recognition and deep learning functions that make it possible for the software to recognize and index the mood of faces in its line of sight.

This new level of technological engagement means teachers can better gauge the mood, interest, and understanding of their students at a glance. Fewer students will be left confused, frustrated, or bored as educators respond to their live, non-verbal communications.

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*Image*: Intel Distribution of OpenVINO toolkit makes it possible for myViewBoard to assess and display the emotional states of learners as immediate feedback for educators.
About the Intel Distribution of OpenVINO Toolkit as a Solution

Collaborating with Intel, ViewSonic is incorporating deep learning and inferencing capabilities of the Intel Distribution of OpenVINO toolkit in its myViewBoard application and deploying a solution on Intel® Core™ processor-based systems to improve performance and maintain accuracy.

In this solution, the WPF C#* application imports the C++ Intel Distribution of OpenVINO toolkit dll for the inference. The C# application sends the raw data of the frames to C++ OpenVINO dll and then it infers the frames and sends the results of the facial expression and emotion detection back to the C# application. The application is executed on different devices’ CPUs and GPUs for better performance results.

Solution Components

- **Intel® Core™ i7 processor**: Gives the compute power required for AI at the edge to run powerful video analytics algorithms based on deep learning in real time.

- **Windows® 10 Pro**
- **Intel Distribution of OpenVINO toolkit**: Enables deep learning on the edge.
- **Topology/algorithm**: Intel® pre-trained models including face detection and emotion recognition retail models

About ViewSonic

Headquartered in California, ViewSonic is a leading global provider of visual solutions with a presence in over 100 cities around the world. ViewSonic is committed to providing comprehensive hardware and software solutions that include monitors, projectors, digital signage, ViewBoard interactive displays, and the myViewBoard software ecosystem. With over 30 years of expertise in visual displays, ViewSonic has established a strong position for delivering innovative and reliable solutions for education, enterprise, consumer, and professional markets and helping customers see the difference.

Learn More
Intel Distribution of OpenVINO toolkit >