

ARROW UNIVERSITY

September 19th, 2024

Indiana Wesleyan University Cincinnati Campus

9286 Schulze Drive
West Chester, OH 45069

Technical Classes Offered:

	Option 1	Option 2	Option 3	Option 4
8:15 - 9:15	Nuvoton	Panasonic	TT Electronics	Wolfspeed
9:30 - 10:30	Littelfuse	Nordic	onsemi	Intel
10:45 - 11:45	altera	Microchip	NXP #1	SiliconExpert
11:45 - 1:15	Lunch in Room 203/204 and Tradeshow in Rooms 215 and 218			
1:15 - 2:15	Critical Link	Phoenix	Silicon Labs	STMicro
2:30 - 3:30	Infineon #2	NXP #2	Qualcomm	TE
3:45 - 4:45	Honeywell	Infineon #1	TDK	Vantron

Additional Manufacturers and Representatives in Attendance at the Tradeshow include:

Allied Enterprises, Amphenol, Bourns, Catalyst-Unity Solutions, CC Electro Sales, Converge, eInfochips, Electronic Salesmasters, Electro-Reps, JF Kilfoil, Micro Crystal, Midstar, Millennium Alliance, Molex, OmniOn Power, Rathsburg Associates, R.O. Whitesell, Schillinger Associates, Staffco, Tempest Tech Sales, TMC, Victory Sales

To register, please visit:

<https://forms.office.com/r/zSmcatGASz>

Our registration website uses Microsoft Forms. If your company blocks this website, you can alternatively register using your smart phone or from your home computer.

Arrow University – ABSTRACTS – Page 1

Altera: Altera's Agilex FPGA use cases in AI, Industrial, MAG, and other applications!

In this session, we will review the status of Altera's spinoff from Intel, the extension of Altera FPGA lifecycle to 2035 and 2040, the Altera's Agilex FPGA brand's roadmap, an introduction to the Agilex 5 noting difference between the E-series and D-series, and Agilex 5 use cases: AI inferencing with integrated AI Tensor Blocks, Industrial Controller, 4K and 8K video, Robotics, and more!

Critical Link: Leveraging SOMs for High Performance Embedded Applications

Advantech revolutionizes industries with game-changing AI solutions. Our tailored applications address diverse sectors, including manufacturing, healthcare, transportation, and retail. Advantech's solutions enhance efficiency, enable better decision-making, and unlock new business opportunities through intelligent analytics, predictive maintenance, smart logistics, and personalized customer experiences. Harnessing these solutions empowers organizations to gain a competitive edge and drive sustainable growth in the AI-powered era.

Honeywell (HSS): Pressure Sensors for Medical, Industrial and Aerospace applications

Pressure sensors are crucial components in various critical systems across industries, from aerospace to healthcare. Their ability to provide accurate and reliable measurements of pressure changes makes them indispensable in ensuring the safety and functionality of critical requirements. You will find our components performing in potential applications including dialysis equipment, blood analysis, centrifusion and oxygen and nitrogen gas distribution, HVAC devices, data storage, process controls, industrial machinery, pumps, and robotics.

Infineon #1: Practical Machine Learning example with Infineon's PSoC 6 MCU / Imagimob Studio

With the use of the PSoC® 62S2 Wi-Fi BT Pioneer Kit and IoT Sense Expansion Kit, we will walk through the creation of a Machine Learning (ML) model. The model will be used to detect the presence of an emergency vehicle siren by being trained with a large pool of both positive and negative audio data. With the Imagimob Studio software, participants will train and test the model, and then deploy the model on the PSoC 6 + Sense kit. PREREQUISITE: Customers must bring their own Windows laptop and have the ModusToolbox™ software installed prior to the class. *Hardware will be provided on-site for demo participation for those who have the prerequisite completed.

Infineon #2: Choosing Memory for an Embedded Design

Choosing memory for your embedded design can be a challenging task. Traditionally, parameters like speed, density, durability and power were the primary parameters to consider when deciding which memory is right for a specific application. Recent advancements in semiconductor technology have proliferated the types of memory subsystems, enabling highly targeted solutions optimized for specific use cases. This presentation will discuss: Memory type overview and main applications, Boot memory technologies, Expansion memory alternatives, Datalogging memory deep dive and performance comparisons, System considerations when choosing memory and Key Use case examples

Intel: Intel AI Essentials: Concepts and Applications

Welcome to the Dayton Arrow University Intel AI Technical Training! In this session, you'll delve into the foundational concepts of artificial intelligence, focusing on Intel's cutting-edge technologies and frameworks such as Intel® Deep Learning Boost and OpenVINO™ toolkit. Our training emphasizes real-world applications across industries, equipping you with the skills to accelerate AI development and deployment using Intel's robust hardware and software solutions. Join us to explore the future of AI with Intel's leading-edge advancements in machine learning and deep learning technologies. Note, this class primer was entirely written by AI!

Littelfuse: Don't Overstress! Battery Pack Protection Solutions

Batteries are becoming an integral part of our everyday lives. They supply power to many devices such as wearables, handhelds, small appliances, and transportation. Reliable and safe operation is critical to customer safety and satisfaction. Selecting the right protection solutions is vital. This seminar will cover the solutions available from Littelfuse to provide the necessary protection.

Microchip: Microchip Enables the 64-bit Intelligent Edge by Introducing the PIC64 Family of Processing Solutions

During this session attendees will learn about Microchip's High-Performance 64-bit MPU's for the Intelligent Edge. Targeted for industrial, aerospace, defense, automotive, consumer, and communications markets, PIC64 complements Microchip's existing 8, 16, 32-bit Microcontroller and 32-bit Microprocessor products, delivering single and multicore 64-bit MPUs. With the increasing need for AI/ML, Fault-tolerance, Real Time processing, and Security, PIC64 enables scalable compute solutions coupled with advanced processing and post-quantum security. Please join our session to learn more about how this exciting new family of scalable processing solutions can help you solve your processing needs.

Nordic: A Brave New World - Key Applications for Nordic Semiconductor's Technology Going Forward

Nordic Semiconductor is uniquely poised to support the increasing growth within the wireless IoT space and has developed complete solutions supporting Bluetooth LE, Thread, Matter, Sidewalk, Wi-Fi 6, LTE-M/NB-IoT/GPS, and DECT NR+. This seminar will focus on asset tracking and other key vertical markets that leverage wireless IoT, and on how Nordic's breadth of capability and resources can add value to new products and applications within these markets.

Nuvoton: How to build a Machine learning and AI-based signal processing device

Today we are talking about the fourth IT revolution, Artificial Intelligent. Leveraging the Industrial Internet of Things, IIoT, edge computing, and the cloud, manufacturers can make informed decisions to increase productivity in real time. In this talk, we will describe a convenient end-to-end process from data collection, AI model creation, and implementation on MCU-based end-point devices.

NXP #1: NXP Machine Learning Trends and Tools

As AI and Machine Learning continue to shape our world, NXP and ARROW are leading the charge in this innovative field. Join us for a session that explores fundamental AI/ML concepts and current trends and showcases a comprehensive ML Ops Toolchain. From model development to deployment on an Edge device, this session includes a live demonstration to bring these concepts to life.

NXP #2: NXP Next generation of Power management and CAN communication

Learn how NXP's Power Management ICs (PMICs) provide safety, scalability and power management solutions with complete sequencing for automotive, industrial and networking. These PMICs integrate both switching and linear regulators required for a total system solution, as well as our broad CAN and CAN FD portfolios that can cover all CAN functions and power modes with high EMC performance, great quality and a multi-sourced industrial base.

onsemi: Controlling the POWER using onsemi HV/LV FETs, IGBTs, Smart FETs

Learn more about onsemi's Si & SiC Power semiconductors for Automotive applications and use of Elite Simulator with Physical PLECs models to speed of design process.

Panasonic: Ahoy Matey! BLE Audio Fundamentals with Parrot Synth Keyboard Demonstration

The Bluetooth standard has evolved with the A2DP profile being one of the earliest adoptions in Bluetooth, and more recently, LE Audio. In this seminar we'll review the history of Bluetooth Audio in a pirate-themed workshop. The Parrot Synth keyboard featuring the PAN1783 will be presented to demonstrate LE Audio and Auracast™ in a fun manner.

Phoenix: Empowering the All Electric Society with Phoenix Contact Solutions

With a growing need for time-savings, flexibility for device design, and ease of use, Phoenix Contact introduces the XPC 1.5, bringing innovative Push-X technology to PCB connectors. This addition adds to the world's already largest portfolio of PCB terminal blocks and connectors, with the widest offering of different wire termination methods. We will discuss the market trends that led to the development, technical specifications, advantages and benefits, and applications for of XPC 1.5.

Qualcomm: Moving AI to the Edge

IoT connects devices, but AI at the edge is what makes them smart. From enterprise to residential applications Qualcomm's IoT AI solutions support a variety of use cases including Smart homes, Industrial, Commercial and Connected Healthcare. The Qualcomm AI Engine enables better security, privacy, and efficiency combined with faster processing and a reduced need for network bandwidth.

TT Electronics: High Reliability Sensors for Military, Aero and Space applications

Learn more about hi reliability sensors from the company that put parts on the Mars Rover. TT Electronics' sensors played a crucial role in the NASA Mars 2020 Rover mission. Our robust Hall-effect sensors were used in the control system for the rover's robotic arm, which detects magnetic fields in motors controlling arm movement. The Mars 2020 Rover aims to collect and prepare Martian rock and soil samples, with TT Electronics' sensors contributing to its success.

SiliconExpert: Fortifying Supply Chains by Ensuring Resilient Design

Discover the 5 A's of Effective Reactive Management. Learn how to fortify supply chains amidst market volatility & navigate disruptions with resilience. Gain insights on proactive strategies & resilient design principles for sustainable supply chain management. Don't miss out on practical steps to enhance agility & mitigate risks. Join us to transform challenges into opportunities for growth.

Silicon Labs: Wi-Fi 6 Benefits for IoT Applications

With rapid technological advancement, the variety of connected devices and application environments is exploding in all directions. The average household has more IoT devices than ever before, and wireless device manufacturers are tasked with keeping up with demand their efforts in areas like performance, cloud connectivity, battery life and device security will influence technology adoption today and long into the future. Wi-Fi has become the core wireless element for these IoT devices that connect to the cloud, and in this session we will cover the rapid evolution of Wi-Fi over the last two decades and dive into the latest version of Wi-Fi, 802.11ax, better known as Wi-Fi 6, its value for IoT devices with its variety of new features that help connectivity in dense environments, improve throughput, increase network efficiency and battery life

STMicro: Rising Above the Horizon: Elevating AI with STMicro's Advanced Time-of-Flight Sensors

Join us for a compelling seminar that delves into the transformative potential of ST's advanced Time-of-Flight (ToF) sensors in the realm of Artificial Intelligence (AI). As AI continues to redefine our interactions with technology, harnessing the right tools becomes essential. ToF technology offers a deeper understanding of the environment that is critical for AI applications. We will illuminate ToF sensors and their pivotal role in enhancing AI's interactive and smart sensing capabilities. We will explore the depth and dimensionality of ToF data and how it can be utilized to forge applications that are both nuanced and responsive. Through real-world examples and use cases, we will demonstrate the versatility and significant impact of ToF sensors across various industries. Additionally, we will provide insights into the keys for designing successful applications using Compact Normalized Histogram ToF data, equipping you with the expertise to integrate these state-of-the-art sensors into your forthcoming AI and machine learning endeavors.

TDK: Low Noise Embedded μ POL modules from 1A to 200A DC/DC

During the seminar, we will cover power maps for popular FPGAs/SoCs and AI ASICs. This includes design examples featuring Schematic layout, Qspice and Simplis. Create your power design for Embedded Control from 1A to 200A DC-DC. This includes analysis of DC, AC transients and low ripple design. We will also feature reference designs for common FPGAs.

TE: TE Connectivity Sensing technologies for industrial & medical applications.

Theory of design and application information for various temperature, pressure, position & vibration sensing technologies used in industrial, medical and IoT applications.

Vantron: Wi-Fi HaLow - The Future of Long-Range Connectivity is Here!

Join our session on Wi-Fi HaLow (IEEE 802.11ah) and discover how Vantron Technology is revolutionizing long-range Wi-Fi solutions. Learn how to integrate Wi-Fi HaLow into your applications for enhanced connectivity. This session will feature live demos of commercial off-the-shelf HaLow-based systems, including modules, access points, and cameras. Experience the benefits of Wi-Fi HaLow technology.

Wolfspeed: Benefits of SiC and when to choose SiC vs Si vs GaN

Performance characteristics of SiC power devices: Benefits of SiC and when to choose SiC vs Si vs GaN. This presentation will feature an overview of benefits of SiC with examples focusing on motion and motor control, vehicle electrification and power supply applications.