



NIWeek 2019 Call for Speakers Submission Guide

Table of Contents

NIWeek 2019 Program Overview.....Page 1

Tips, Best Practices, and FAQs.....Page 3

Glossary.....Pages 5-8

NIWeek 2019 offers technical content in a variety of formats for every level of expertise to help engineers and scientists increase their proficiency using the NI platform. With technical sessions, attendees gain new information focused on their industry or skills development needs. If you have a technical session that offers some of the following, we'd love to see an abstract from you! Submit your abstract by December 7th.

Technical sessions provide:

- Real-world customer examples
- Insight into new product and technical information
- Hands-on experiences
- Networking with industry experts
- Learning from R&D experts about future technologies

Step 1. Select a track.

Industry Tracks

Objective: Attendees gain new understanding and information within a specific industry. These sessions inspire innovation by showcasing real-world customer examples and offering insight into new products and technologies. Attendees can learn from industry and R&D experts how NI impacts their industries and walk away with the confidence to apply the NI platform to their technical challenges.

- Academic
- Aerospace and Defense
- Automotive
- Semiconductor

Skills Development Tracks

Objective: Attendees develop deeper knowledge and skills to become more proficient using the NI platform. Categorized based on software or hardware application, these sessions range from introductory and informative to more advanced topics. Past skills development sessions include synchronization and timing, web technologies, hardware abstraction layers, measurement accuracy, and effective code testing and deployment. Regardless of the specific topic, all the sessions are relevant to the common challenges that NI customers are tackling.

- Hardware and Technologies
- Software Engineering Processes, Architecture, and Design
- Software Fundamentals

Step 2. Describe your session.

Technical Levels

- Informative
- Introductory
- Experienced
- Advanced

Session Types

(*Only NI employees may select session types with asterisks.)

- Industry Talk
- Case Study
- How-To Presentation
- NI Industry Track Keynote*
- Product Talk With Demonstration*
- How-To Hands-On Lab*
- NI R&D Tech Talk*
- NI Panel Discussion*

Featured Product(s)

Check all that apply

- | | | |
|---|-------------------------------------|---|
| <input type="checkbox"/> Not Product Specific | <input type="checkbox"/> NI ELVIS | <input type="checkbox"/> LabVIEW FPGA Module |
| <input type="checkbox"/> Automotive Networks | <input type="checkbox"/> FieldDAQ | <input type="checkbox"/> LabVIEW NXG |
| <input type="checkbox"/> CompactDAQ | <input type="checkbox"/> FlexLogger | <input type="checkbox"/> LabVIEW NXG Web Module |
| <input type="checkbox"/> CompactRIO | <input type="checkbox"/> FlexRIO | <input type="checkbox"/> LabVIEW Real-Time Module |
| <input type="checkbox"/> Data Acquisition Devices | <input type="checkbox"/> InsightCM | |
| <input type="checkbox"/> DIAdem | <input type="checkbox"/> LabVIEW | |

- LabWindows/CVI
- Measurement Studio
- Modular Instruments
- MultiSim
- PXI

- RF Instrumentation
- Semiconductor Test System
- Software Defined Radio
- SystemLink

- TestStand
- VeriStand
- Vision
- Other: _____

Related Industries (Only NI employees may select the related industries.)

- Not Industry Specific
- Academic
- Aerospace and Defense
- Automotive
- Semiconductor

Best Practices, Tips, and FAQs

Best Practices for Submitting Your Technical Session

- Write abstracts in English.
- Submit abstracts online via the Call for Papers submission portal
- See the NIWeek 2018 session materials via the NI Community to review topics previously presented.
- Consider real-world examples or a demonstration to help engage attendees more.
- Provide background information to help our reviewers better understand your topic.

Tips for Writing Effective Abstracts

- Think of a compelling and descriptive title that is 65 characters or less including spaces. Stronger titles are single, concise messages that include benefits, numbers, and actionable words. Titles that work for a global audience are best.
- Keep in mind that typically 15 sessions are being presented at the same time during a given time slot, so a compelling title and abstract are key to drawing attendees to your session.
- Describe in your abstract what you will discuss if your session is accepted. Abstracts can be up to 350 characters with spaces (about 75 words). The NI selection committee edits abstracts for NI style before asking for your final approval of the abstract. The abstract is then posted for registrants to view in the online catalog and mobile app.
- Make sure your abstract is descriptive enough that we know what you're going to talk about, what attendees will learn, and how they can apply their new skills in the real world.
- Write in a second-person teaching tone. You're a trusted adviser on your topic to attendees.
- Use active voice with strong verbs.
- Write like you talk. Engineers don't have time to pick through a bunch of flowery language, so use plain language and concise text.
- Read your abstract out loud. If you have to take a breath while reading a sentence, consider shortening the sentence.
- When using abbreviations or acronyms, spell out the full term and define the abbreviation or acronym on first reference and use only the abbreviation or acronym on subsequent references.

Dos

- Plan ahead. You have roughly 45 minutes to inspire and educate your fellow attendees.
- Be passionate about your chosen topic.
- Feel free to submit more than one abstract.
- Consider how your presentation is relevant and beneficial to your target audience.
- Consider what discussions could be sparked by your presentation. NIWeek is all about meeting people and discussing ideas; consider what people will talk about after your presentation.
- Tell a story. Better yet, tell your story.
- Share real-world examples, especially your own experiences, to support your ideas. Show programming samples or demonstrate product capabilities where appropriate.

Don'ts

- Use your presentation as a platform to market your company or product.
- Switch your topic at the last minute and talk about something completely unrelated. If something changes, please work with us on making the updates.

FAQs

When will speakers be selected and notified?

Selecting the best speakers for NIWeek is a long and difficult process because we receive so many inspiring abstracts from truly impassioned people, but we want to encourage everyone to submit a proposal. After the submission deadline, the NIWeek speaker submissions review board will review all the proposals and select the sessions that will create the most interesting mix of topics at the conference. We aim to have all speakers confirmed by February 2019.

If I'm selected as a speaker, what happens next?

All speakers receive a free full conference pass. Travel-related expenses, meals (other than those specified as provided by the conference), and additional accommodations are the responsibility of the speaker. If your abstract is selected, be prepared to provide a biography and photo. You will be invited to an online speaker center to access more information including the NIWeek 2019 PowerPoint template to develop your presentation.

Glossary

Industry Tracks

Aerospace and Defense—Engineers and scientists in this industry face increasingly complex technology advancements and stricter quality and accuracy demands. They require smarter solutions to address both the rapid pace of RF innovations and the need to support legacy programs. These sessions offer insight into how test groups are reducing the cost of test, improving performance, and benefiting from flexible and adaptable software and hardware platforms. Example topics include:

- US Army I2WD: Global Measurement Standardization
- From The Experts: Security Compliance of Test Systems
- Avionics Test With LabVIEW for 8 Microsatellites: CYGNSS

Academic—Academic institutions continue to deliver the research outcomes to solve global engineering challenges while designing the methods to help students increase their rate of discovery. These sessions provide forums for discussion on adapting to the future needs of engineering students and researchers successfully using the NI platform. Example topics include:

- How We Taught an Electrical Race Car to Race Autonomously
- Experimental Methods for Teaching Power Electronics
- Segmenting a Semiconductor Test Curriculum Into a Course Sequence

Automotive—As vehicles and their subsystems become smarter, test engineers face drastically increasing system complexity while dealing with ever-present cost and time pressures. These sessions show how to significantly reduce deployment time and cost while increasing test coverage with adaptable hardware and software that can integrate with the tools you already use. Example topics include:

- Functional Test of ECUs in the Manufacturing Phase
- Automated Test of Automotive MCU Peripheral Driver Software
- Standardized Hardware-in-the-Loop Test Automation With TestStand
- SKYIT Cloud-Based RF Infotainment Test Platform
- Setting New Standards for the Future of HIL Test Automation

Semiconductor—As the proliferation of smarter systems and advanced wireless networks advances semiconductor industry innovation, test engineers must solve the challenge of testing increasingly feature-rich and complex ICs while dealing with the unrelenting pressure to deliver under tight market windows and meet cost targets. These sessions demonstrate how NI solutions can help your organization achieve required test coverage and lower capital expenses and operational costs while improving time to market. Example topics include:

- Standardizing V&V/Characterization Labs to Improve Time to Market
- System-Level Test Methods for Complex RF SiPs
- Overcoming the New Test Challenges of 802.11ax
- How to Create a Behavioral Digital Predistortion Model
- Best Practices for TestStand Semiconductor Module Development
- Parametric Test of Integrated Passive Devices
- Achieving Superior RF Performance: The Quest for -50 dB EVM

Skills Development Tracks

Hardware and Technologies—Engineers from a wide range of industries use NI hardware and technologies to be more productive and innovative. This track teaches best practices for using NI hardware and explores some of the fundamental technologies involved. Exploring topics ranging from signal integrity to vision system deployment, IoT communication buses, and DAQ signal synchronization, these sessions ensure attendees have the knowledge they need to make the most of the tools and technologies they use every day. Examples topics include:

- Improve Measurement Accuracy in Your Application
- How to Build a Scalable Distributed DAQ System
- From the Designers: DC Measurement Tips and Tricks
- Realizing the Benefits of the Industrial IoT in the Real World
- Key Considerations for Building a Vision Inspection System

Software Engineering Processes, Architecture, and Design Track

This track is powered by LabVIEW Champions and other advanced users. Anyone developing LabVIEW applications beyond the simple and basic can benefit from the sessions in this track. Attendees walk through software engineering processes and discover how to architect and design effective software in LabVIEW. They also learn crucial steps and key principles in software design, test, deployment, and maintenance. Example topics include:

- HAL/MAL: Designing a Real-World Hardware Abstraction Layer That Lasts
- DQMH: Tips and Tricks for a Successful DQMH-Based Project
- Clean Code: Under the Hood of a Sophisticated Messaging Framework
- Use PPLs to Build and Deploy Large, Scalable Applications and Get a Head Start on GLLs in LabVIEW NXG
- UI: Leveraging the Window API to Extend LabVIEW GUI Capabilities
- CI and Deployment: The Rest of the Story
- Software Test Strategies

Software Fundamentals—This track covers skills ranging from best practices in using out-of-the-box NI application software to programming strategies when developing with a software IDE. From the essentials of error handling to an introduction in object-oriented programming, attendees explore key foundational tenets to successfully create basic applications and extend their knowledge. Example topics include:

- User Interface Fundamentals
- Debugging Techniques
- Third-Party IP Integration
- Code Optimization
- Object-Oriented Programming Basics
- Code Smells: Sniffing Our Poorly Written Code
- Building and Distributing Applications

Session Types

(*Only NI employees may select session types with asterisks.)

- **NI Industry Track Keynote (one per industry track)*:** An NI-owned keynote kicks off each industry track. The purpose is to set the stage for where NI stands within these industries in terms of the customers we work with, the technologies we are developing to support system success, and the partners we collaborate with to help make our customers successful. These keynotes feature individual speakers or a panel. NI solely decides the content of these sessions.
- **Product Talk With Demonstration*:** NI R&D, product marketing, and applications engineers present instructional demos on new and existing products, offer tips and tricks, and show how to leverage the power of the NI platform. These sessions are in the Tech Theater in the Exhibit Hall.
- **How-To Hands-On Lab*:** NI applications and systems engineers offer step-by-step instructions for attendees exploring new products and solutions.
- **How-To Presentation:** Experts share general how-to advice on solving a specific problem. Information presented in these sessions ranges from basic instruction (for example, the basics of getting started with WebVIs and how to develop clean code) to more advanced how-to sessions on complex topics such the Actor Framework and continuous integration.
- **NI R&D Tech Talk*:** NI R&D engineers present their thoughts on current and future technologies and how they may affect your company.
- **Industry Talk:** Thought leaders discuss industry trends and provide industry insights in these presentations.
- **Case Study:** Customers and partners discuss how they overcame challenges and created cost-effective solutions for a variety of technical applications in a determined industry.
- **NI Panel Discussion*:** Exceptional leaders share perspectives on thought-provoking current topics to help attendees gain additional insight for their design decisions. Panels are presented by NI engineers, partners, and customers. They include one moderator and no more than three panelists.

Technical Levels

Introductory—Attendees learn foundational concepts for a product, technology, or solution. No experience is required.

Experienced—Attendees expand their foundational knowledge and gain a deeper understanding of practical applications.

Advanced—Attendees continue developing their mastery within a highly technical area. They become experts in complex applications and programming best practices.

Informative—Attendees gain valuable general information in presentations that all experience levels can understand.