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NATIONAL SCIENCE FOUNDATION

Notice of Workshop on Artificial Intelligence & Wireless Spectrum: Opportunities and Challenges.

AGENCY: Networking and Information Technology Research and Development (NITRD) National Coordination Office (NCO), National Science Foundation.

ACTION: Notice of Workshop.

SUMMARY: This workshop will focus on the opportunities and challenges posed by the application of existing and new Artificial Intelligence (AI) techniques in the wireless spectrum context.

DATES: August 28-29, 2019.

ADDRESS: The workshop will take place on August 28 from 9:00 a.m. to 5:00 p.m. (ET) and August 29, from 8:30 a.m. to 12:30 p.m. (ET), at the Griffiss Institute Center for Information Assurance, Rome, NY. Due to meeting space limitations, in-person attendance is by invitation only; remote participation for the plenary sessions will be available via webcast. The agenda and information about how to join the webcast will be available the week of the event at: https://www.nitrd.gov/nitrdgroups/index.php?title=Artificial-Intelligence-Wireless-Spectrum .

FOR FURTHER INFORMATION CONTACT: Joyce Lee at (202) 459-9674 or email *wsrd-register@nitrd.gov*. Individuals who use a telecommunications device for the deaf (TDD) may call the Federal Information Relay Service (FIRS) at 1-800-877-8339 between 8 a.m. and 8 p.m., Eastern time, Monday through Friday.

SUPPLEMENTARY INFORMATION:

Overview. This notice is issued on behalf of the NITRD Wireless Spectrum Research and Development (WSRD) Interagency Working Group (IWG). Agencies of the WSRD IWG are conducting a workshop focused on the application of existing and new AI techniques in the wireless spectrum context.

Wireless spectrum has been managed and utilized over many decades through a complex regulatory framework and a patchwork of policies. The current manual process of assessing spectrum needs is a growing problem due to the high-level of interdependencies in the spectrum domain. Existing and emerging methods for allocating spectrum are often driven by small studies that suffer from inherent biases. As a result, spectrum policies and usage are often sub-optimal and rigid, preventing efficient use of wireless spectrum. To maintain our Nation's global leadership in 5G technologies and deployment, we need fast and efficient wireless spectrum policy creation, adoption, and management of wireless spectrum.

AI techniques have been successfully applied in many other domains, such as image classification or autonomous navigation, which previously relied on either model-based approaches or a vital human-in-the-loop element. Despite the differences between multimedia and radio frequency signals, researchers have shown that the

judicious integration of AI techniques can provide similar gains in the wireless spectrum domain.

Potential areas to be explored in this workshop include, but are not limited to:

- Artificial Intelligence for Future Communications Networks
- Artificial Intelligence for Dynamic Spectrum Allocation and Policy Management
- Artificial Intelligence for Spectrum Sharing

Experts from government, private industry, and academia will discuss current use cases, effective technology, tools, and practices, while identifying gaps and issues that will require additional research to resolve.

Workshop Objectives. Identify areas where artificial intelligence techniques can help increase efficiency of wireless spectrum use; and discuss ongoing efforts in federal, industrial and academic domains to utilize AI techniques in the wireless spectrum domain.

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