Proceedings of the IEEE Releases Special Issue Examining Augmented Reality

Trusted Electrical Engineering and Computer Science Journal Explores Cutting-edge Research Applications, Privacy and Security Issues of AR and More

Piscataway, NJ – Feb. 27, 2014 –The February issue of *Proceedings of the IEEE*, the most highly cited general interest journal in electrical engineering and computer science, delves into the notion of bridging the disconnect between the cyber world and physical world, also known as augmented reality. With the increased traction of Google Glass, it is timely to examine the issues of privacy and security that accompany augmented reality concepts. This issue provides a window into helping to solve these types of critical research challenges as they emerge.

Led by guest editors Jules White (Department of Electrical Engineering and Computer Science, Vanderbilt University, Nashville, Tenn.), Douglas C. Schmidt (Associate Chair, Computer Science and Engineering, Vanderbilt University, Nashville, Tenn.), and Mani Golparvar-Fard (NCSA Fellow and Assistant Professor of Civil Engineering and Computer Science at University of Illinois at Urbana-Champaign), the special issu cutting-edge research applications of augmented reality and the advances in the underlying computer vision, indoor/outdoor localization and human-computer interaction techniques that make these applications possible.

The issue points out the major challenge faced by users of cyber-physical systems: they can't see and manipulate the cyber information needed to make decisions, in context, about the physical world. For example, a construction worker walking around a build site can see a 3-D model on his tablet for a project, but he can't apply that model, directly, to the actual building that's taking place around him. That disconnect can often lead to mistakes, and that's where augmented reality comes in, connecting the physical and cyber world.

Within this special issue, you'll find:

- An examination of key challenges that must be overcome to make AR an essential element of industrial software platforms.
- The use of AR in safety-critical systems, such as automobiles.
- Building AR applications that fuse data from unmanned vehicles and robots to enhance user perception of their environment.
- Applications of AR in mobile computing.
- Cognitive models for understanding the impact of AR on human perception and approaches for using these models to enhance therapeutic applications.
- Research solutions for constructing real-world tools that can manipulate cyber information.
- Approaches for enhancing the perceived realism of AR experiences.
- Application of AR for facility management in the oil industry.

To learn about all of these concepts, and more, please pick up the February issue of *Proceedings of the IEEE*. To see the list of upcoming issues, visit the IEEE website.

About the *Proceedings of the IEEE*

Founded in 1912 and first published in early 1913, (originally as *Proceedings of the IRE*), *Proceedings of the IEEE* is the most highly cited general interest journal in electrical engineering and computer science. This journal provides in-depth tutorial and review coverage of the technical developments that shape our world, enlisting the help of guest editors and authors from the best research facilities, leading edge corporations and universities around the world. For more information on *Proceedings of the IEEE* and the latest ideas and innovative technologies, visit http://www.ieee.org/proceedings.

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