GetMobile

MOBILE COMPUTING & COMMUNICATIONS REVIEW

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MESSAGE FROM THE EDITOR-IN-CHIEF

CONTRIBUTORS

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IN THIS ISSUE, we showcase research that addresses challenges of interest to the GetMobile readership that appeared at conferences that are not sponsored by SigMobile. This best-of-the-rest issue includes three Highlight articles: From ACM SENSYS 2017, we highlight "Gaze Tracking for Virtual Reality," by Tianxing Li, Qiang Liu and Xia Zhou. This paper presents *LiGaze*, a low-cost, low-power approach to gaze tracking tailored to virtual reality (VR). LiGaze infers gaze direction by exploiting the pupil's light absorption property using low-cost photodiodes, without the need for cameras and active infrared emitters.

From USENIX NSDI '18, we highlight "*LiveTag:* Sensing Human-Object Interaction Through Passive Chipless Wi-Fi Tags," by Chuhan Gao, Yilong Li, and Xinyu Zhang. LiveTag is a new wireless sensing method that monitors human object interaction using passive, batteryless, chipless metallic tag, which responds to touches in a way that can be remotely detected by Wi-Fi receivers.

Finally, from ACM SOSP 2017, we highlight "*DeepXPlore*: Automated Whitebox Testing of Deep Learning Systems," by Kexin Pei, Yinzhi Cao, Junfeng Yang, and Suman Jana. DeepXplore is a system for automatic testing of large-scale deep learning (DL) networks. The paper describes how DeepXplore generates inputs that trigger different parts of a DL system's logic to uncover different types of erroneous behaviors, and how it identifies erroneous behaviors of a DL system without requiring manual labeling or checking.

The rest of the issue consists of four more columns:

The Education column features an article by Breanne K. Litts and Whitney E. Lewis that reports on their experiences conducting workshops with children ages nine to 17, in which learners create mobile augmented reality technologies. Their findings indicate that participants learn and apply deep computational concepts and

practices, including algorithmic thinking, debugging, and conditional logic. Moreover, learners are engaged with their local environment and community in ways that prompt civic participation.

In the (Almost) Unpublishable Results column, Abu Zaher Md Faridee, Sreenivasan Ramasamy Ramamurthy, and Nirmalya Roy share their experiences with *HappyFeet*, a prototype dance activity recognition framework. The authors describe the challenges involved in developing an automated dance activity recognition and assessment system that functions as a learning companion for aspiring dancers and a teaching aid for instructors.

In the Mobile Platforms column, Wenhao Li, Yubin Xia, and Haibo Chen provide an overview of research efforts that leverage the *ARM TrustZone*, a hardware-based security feature that provides software with a high-privilege and isolated execution environment.

Finally, the Makers column features a paper by Joshua Adkins, Branden Ghena, and Prabal Dutta about *Signpost*, a solar-powered sensing platform that aims to enable easy, multiuse sensor deployments for citizens and researchers who have little expertise in building smart and connected sensors.

I hope you enjoy this issue, and I welcome your thoughts about GetMobile in general, and this issue in particular. ■

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