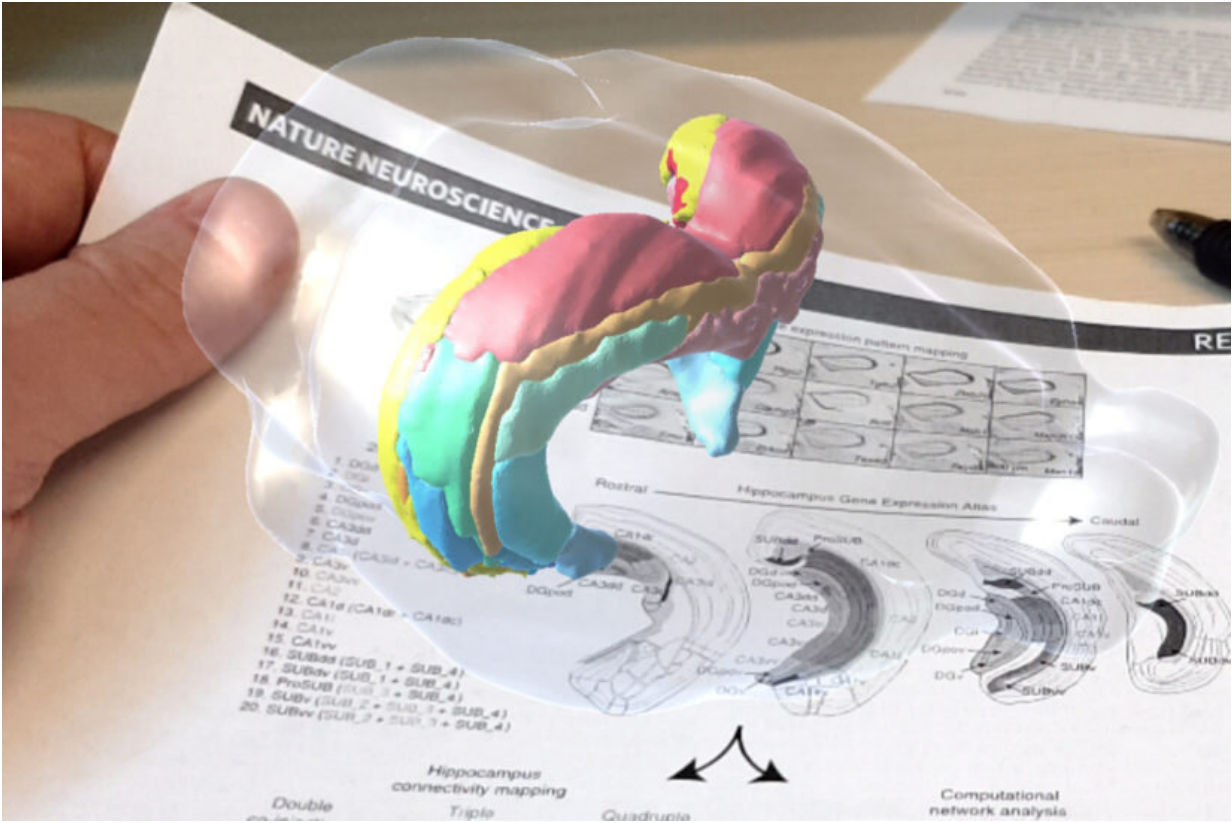


Augmented reality app adds interactive enhancements to scientific posters, presentations

October 17 2019, by Zara Greenbaum



The creators of the Schol-AR app aim to enrich scientific publications using augmented reality, which can show information that is less prone to misinterpretation and better represent complex scientific concepts. Credit: Tyler Ard and Arthur Toga

USC scientists have launched a smartphone application that uses augmented reality to add 3-D models, fly-throughs and other data to enrich science communication materials such as posters, publications and presentation materials.

The app's creator, Tyler Ard, assistant professor of research at the USC Mark and Mary Stevens Neuroimaging and Informatics Institute of the Keck School of Medicine of USC, used software similar to that used by Pokémon Go. Users of the augmented reality app simply point their smartphone cameras at a supported image to pull up hidden interactive content.

"Our goal is to facilitate the exchange of ideas and information in a way that's less prone to misinterpretation, and more conducive to conveying the deep comprehension that underlies the scientific process," Ard said. The app, named Schol-AR, will soon allow researchers at USC and beyond to upload their own materials.

Augmented reality app provides visual insight into human biology

Schol-AR debuted this month on the cover of the journal *NeuroImage*, which features a [study](#) by Danny Wang, professor of neurology and director of imaging [technology innovation](#) at the USC Stevens Neuroimaging and Informatics Institute. The [cover image](#), based on high-resolution data collected by the institute's ultra-high-field 7Telsa [magnetic resonance](#) imaging scanner, depicts very [small blood vessels](#) in the brain known as lenticulostriate arteries. Wang and his team have developed and tested a new noninvasive method for precisely visualizing these vessels, which can help in the study and treatment of cerebral small vessel disease.

But view this image through the Schol-AR app and suddenly you see the size, shape and positioning of these vessels as they relate to the brain structures they supply. When users can manually enlarge, rotate and explore, a much more realistic picture of the underlying biology emerges.

"The 3-D model provides more insight into where these arteries are situated within the context of important structures in the brain," said Samantha Ma, graduate student researcher at the USC Stevens Neuroimaging and Informatics Institute, first author on the study and a member of Wang's team. "Interacting with the augmented version allows readers to understand how the shape of these vessels could change with age, disease or both."

Schol-AR debuts today at the annual meeting of the Society for Neuroscience in Chicago. The USC Stevens Neuroimaging and Informatics Institute will also release Schol-AR Creator, a companion application that allows researchers everywhere to upload and embed interactive figures within their own educational materials.

"From its inception, we've opted to democratize this technology to aid the efforts of researchers across scientific disciplines," said Arthur Toga, director of the USC Stevens Neuroimaging and Informatics Institute. "We envision that this groundbreaking new way of visualizing scientific data will change the way findings are communicated well beyond the field of neuroscience."

Provided by University of Southern California

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