



TYLER BELL:

Augmenting our

REALITY

Any fan of *Star Wars* has seen Princess Leia plea for help through a 3D hologram. Tyler Bell, a new assistant professor of electrical and computer engineering, wants to make communications just like the ones in the movie an everyday reality.

“Almost everyone has used Facetime or Skype, or some other kind of video chat on their phones or tablets,” said Bell. “But what if those calls were delivered in 3D? It could seem as though the person on the phone is right there in the room with you.”

Bell’s research involves compression of 3D data that would allow the formatting to be small enough to stream over current and future wireless networks. By making the data compression both quick and efficient, these calls could be made using existing consumer devices instead of expensive high-powered computers and scanners.

What sounds like fun science fiction has direct applications for medicine, forensic science, agriculture, entertainment, and the arts. Bell’s imaging techniques could also be used for augmented reality – where the 3D images are inserted into the viewer’s existing environment – or virtual reality – where users are completed inserted into a different visual space.

“We could see the application of this technology in operating rooms or farm fields as well as in art galleries and on film or in television,” said Bell. “The technology has so many uses in areas outside of engineering that I am looking at collaborations with faculty members in the UI Roy J. and Lucille A. Carver College of Medicine as well as in the UI College of Liberal Arts and Sciences.”

The possibility of such partnerships is part of what brought Bell back to his native state of Iowa. Hailing from Marshalltown, IA, Bell received his undergraduate and master’s degrees from Iowa State University and a PhD from Purdue University. The Department of Electrical and Computer

Engineering was looking to grow its new major of computer science and engineering, and the College of Engineering was interested in bolstering research that combined virtual reality, augmented reality, and the arts. Both of these areas of growth were especially appealing to Bell who could find a home for his multi-disciplinary scholarship that would bring him closer to his family in Iowa.

“I can relate to our students in part because not that long ago, I was right where some of them are,” said Bell. “I was an Iowa kid trying to figure out the engineering world. Now, I feel like I am in a position to give back to these students both as an engineer and as an Iowan.” ■

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ASSISTANT PROFESSOR OF ELECTRICAL AND COMPUTER ENGINEERING

