Augmented Reality for Enterprise Alliance Announces the AR Security Infographic

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The infographic has ten sections for AR Security. The sections contain the risks and considerations related to the topic within AR. Each section has a summary to the left when it is clicked on. There is a detailed page for the section when clicking the 'LEARN MORE' button.

"AR headsets pose unique security risks for businesses. Traditional mobile security isn't enough," said Mark Sage, Executive Director of the AREA. "Vendors, IT departments, and users share responsibility for securing AR."

The sections include:

Attack Surface—Pathways to infiltrate and corrupt data.

- **Connection Abuse—**Enterprises contain AR devices that connect many mobile devices. Understanding the network connections and potential threats at all levels is essential.
- **Physical Breach—**AR devices pose unique security risks because they collect real-world data (audio, video, location), unlike traditional IT systems.
- **System Breach—**AR devices introduce new security risks beyond those of mobile devices.

Data Domains – Nefarious agents use these domains to eavesdrop, pilfer, and exploit enterprises.

- **Trust Exploitation/Data Extraction—**AR devices pose unique security challenges due to their ability to interact with the physical world.
- **External Services/Physical World Data—**AR devices collect vast user data through cameras, sensors, and microphones.
- **Environment/Object/Visual Manipulation—**AR devices introduce unique security risks for businesses. Unlike traditional IT systems, AR devices collect real-world data (audio, video, location) that attackers can exploit.

Considerations –

- **Configuration & Management/Integrity Protection—**AR devices face mobile device security challenges, including logging, malware detection, and incident response.
- **Root of Trust/Physical Security—**AR devices require a hardware root of trust for core security functions due to their unique hardware and complexity.
- **I/O Security/Identity—**AR's unique hardware and data collection require careful security assessment of all components to minimize confidentiality, integrity, and availability risks.
- **Access Control/Monitoring & Analysis—**AR's new voice, gesture, and gaze controls make strong passwords difficult for secure access. Biometrics offers a solution, but integrating them securely company-wide is complex.

The AREA Security Committee member companies and Brainwaive LLC contributed expert insight to completing the AR Security Infographic.

About the AR for Enterprise Alliance (AREA)

The AR for Enterprise Alliance (AREA) is the only global membership-funded alliance helping to accelerate the adoption of enterprise AR by supporting the growth of a comprehensive ecosystem. The AREA accelerates AR adoption by creating a comprehensive ecosystem for enterprises, providers, and research institutions. AREA is a program of Object Management Group® (OMG®). For more information, visit the AREA website.

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ORAU awards 35 research grants totalling $175,000 to junior faculty at its member universities; GDIT and the AREA fund single grants in new specialty areas

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The awards recognize faculty members for their work in any of five science and technology disciplines: engineering and applied science; life sciences; mathematics and computer science; physical sciences; and policy, management or education. GDIT's award funds research in supply chain innovation while The AREA's award focuses on augmented reality in the workplace.

"Each year, ORAU supports the research and professional development of emerging leaders at the universities who are members of our consortium," said Ken Tobin, ORAU chief research and university partnerships officer. "The Powe Award program is always extremely popular and very competitive. We are grateful to join with GDIT and The AREA in expanding the research focus of these awards."

"The AREA is excited about supporting faculty research in higher education to support the use of AR in the enterprise," said Mark Sage, AREA executive director. "Our mission is to further the adoption of interoperable AR-enabled enterprise systems."

Alex McGuire, GDIT's vice president and supply chain officer, added, "As a supply chain innovator, we're honored to support ORAU grant recipients and their research to advance and apply next-generation science and technology."

The Powe recipients, each of whom is in the first two years of a tenure track position, will receive $5,000 in seed money for the 2024-25 academic year to enhance their research during the early stages of their careers. Each recipient's institution matches the Powe award with an additional $5,000, making the total prize worth $10,000 for each winner. Winners may use the grants to purchase equipment, continue research or travel to professional meetings and conferences.

Since the program's inception, ORAU has awarded 910 grants totaling more than $4.55 million. Including the matching funds from member institutions, ORAU has facilitated grants worth more than $9 million.

The awards, now in their 34th year, are named for Ralph E. Powe, who served as the ORAU councilor from Mississippi State University for 16 years. Powe participated in numerous committees and special projects during his tenure and was elected chair of ORAU's Council of Sponsoring Institutions. He died in 1996.

Recipients of the Ralph E. Powe Junior Faculty Enhancement Awards for the 2024-2025 academic year are listed below:

ORAU Award Recipient	Member Institution
Augusta University	Evan Goldstein
Catholic University of America	Dominick Rizk [*GDIT Award*]
Duke University	Di Fang
Fayetteville State University	Chandra Adhikari
Florida International University	Asa Bluck
Iowa State University	Esmat Farzana
Iowa State University	Qiang Zhong
Louisiana State University	Sviatoslav Baranets
Michigan Technological University	Tan Chen
Oakland University	Alycen Wiacek [*The AREA Award*]
Ohio State University	Zhihui Zhu
Penn State University	Tao Zhou
Purdue University	Justin Andrews
Tulane University	Daniel Howsmon
University of Alabama at Birmingham	Rachel June Smith
University of Alabama in Huntsville	Agnieszka Truszkowska
University of Arizona	Kenry
University of Arizona	Shang Song
University of Colorado Denver	Stephanie Gilley
University of Colorado Denver	Linyue Gao
University of Delaware	Yan Yang
University of Florida	Angelika Neitzel
University of Houston	Ming Zhong
University of Memphis	Yuan Gao
University of Mississippi	Yi Hua
University of New Mexico	Madura Pathirage
University of North Carolina at Charlotte	Lin Ma
University of North Texas	Linlang He
University of Oklahoma	Kasun Kalhara Gunasooriya
University of Texas at El Paso	Eda Koculi
University of Utah	Qilei Zhu
University of Wisconsin-Madison	Whitney Loo
Vanderbilt University	Alexander Schuppe

Vanderbilt University	Lin Meng
Virginia Tech	Jingqiu Liao
Washington University in St. Louis	Xi Wang
Yale University	Huaijin Ken Leon Loh

For more information on ORAU member grant programs, visit
https://orau.org/partnerships/grant-programs/index.html.

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Theorem Solutions – Placing models using

QR codes in Augmented & Mixed Reality

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How to Use QR Codes in HoloLens 2 Mixed Reality

Video: Using the QR Code Offset tool in Microsoft HoloLens 2The QR code offset feature using QR Code Detection in Microsoft HoloLens 2, allows a QR code to be utilized as an origin point when visualizing 3D models in MR. In Theorem Solutions' Visualization Pipeline, users can set where the digital model will appear in relation to a QR code. Then any time you use a QR code to load the model it will appear in the same place.

This helps put models in context and allows users to see if something will fit in a certain location. For example, when seeing if parts would fit within an automotive setup, a QR code can be used to set the origin in the center of a car and digital models of parts can be positioned using the offset feature. This allows users to be more exact with the placement of their models when working with physical objects and digital models together.

Additionally, provided the QR code isn't moved, this feature allows users to load a model in the same place every time. This gives users greater flexibility to their work process, allowing users to look at multiple models in succession, and then revisit a previous model with the assurance that the model will remain exactly where it needs to be.

Using QR Codes in Augmented Reality