



BRENT DINGLE, PHD

APPLIED RESEARCH ENGINEER AND CONSULTANT

CONTACT

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EDUCATION

PhD Computer Science

Texas A&M University, 2007

M.S. Mathematics

Texas A&M University, 1999

B.S. Computer Science

B.S. Mathematics

Bradley University, 1995

SKILLS

- Leadership & Management
- Project Planning, R&D
- Systems Architecture
- Teamwork/ Communication
- Graphics & Image Processing
- Simulation, Games & Modeling
- XR, AR, VR, MR
- AI/ML
- Agile Development
- Programming
Windows, Linux, Mobile, Web
C/C++, JS, Python, HTML, Pascal
- Reality Capture
Laser Scanning, Motion Capture
- Mentoring & Teaching

ACHIEVEMENTS

Technical Honors

Raytheon, 2019 - 2020

Excellence in Engineering

Raytheon, 2018

PROFESSIONAL OVERVIEW

I research, design, develop, and test new business technologies to improve business processes, collaboration, and remote communications. Much of this work involves advanced visualization methods and technology. This includes:

Investigating AR, VR, XR, stereoscopic, and holographic devices; Exploring business AI use cases; Using reality capture technologies; Designing and testing user interfaces and processes; Writing software as needed; Giving demos of all such technologies; Consulting on, and leading projects and business decisions involving such; Publishing papers, presenting at conferences, mentoring interns, and speaking at universities.

In the past I have designed, developed, and coded simulations and games, with two mobile games published. I have taught Computer Science, Mathematics, and Game Design courses. Much of my background involves graphics, imaging, simulation, and modeling. This aligns with my graduate work in Volumetric Particles. Early in my career I helped develop a data warehouse, SQL report applications, and ODBC drivers. As an undergrad I developed apps to help visualize engineering data. For fun I manage, assist in, and judge hack-a-thons, game jams, and game competitions.

WORK EXPERIENCE

Senior Engineer

Raytheon | An RTX Business, Tucson AZ and McKinney TX

2016- Present

I perform applied research and development. Depending on current needs I am a developer, a business consultant, an investigator, a project leader, a mentor, and a public speaker. I also write papers and submit patent applications. Among other things, I have:

- Designed and built a large-scale stereoscopic display system, reducing costs by over 30% and standardizing equipment to RTX requirements.
- Designed and implemented proof-of-concept systems for improving business processes and communication throughout the product lifecycle. Examples include:
 - AI image processing to remove background and focus on an object of interest,
 - Robotic remote visualization/inspection system,
 - Automated fall safety detection system,
 - Pseudo-holographic table for viewing production flow.
- Planned and mentored projects for interns, some resulting in published papers.
- Mentored Raytheon-University collaboration senior-capstone projects for the University of Arizona and the University of Texas-Dallas students.
- Performed reality capture activities and research. Including laser scanning, flying drones, and building computer-vision motion capture systems.

Assistant Professor

University of Wisconsin - Stout, Menomonie WI

2013- 2016

Planned and taught Computer Science and Game Design and Development courses. Led undergrad students in R&D efforts. Member of hiring committees. Helped with ABET accreditation. Product owner for junior and senior projects. Managed multiple teams of CS and Art students. Taught agile development methods.

PRESENTATIONS

2025

AR for Enterprise Alliance (AREA) Podcast
AR in the workplace. Interview with M. Sage.

2024

AES Conference Presentation

Productivity Parables

Girls Who Code, Online Event

General discussion on programming and CS

Texas Christian University

Demo of AR technology to students

2023

AES Conference Presentation

XR – Business Technology Use Cases

2022

RAMS Conference Presentation

Using Machine Learning, Paper presentation

XR Group, Raytheon

Projects of the Immersive Design Center

MoCap – Siemens Jack; Choose-Your-Own

Video Framework; AR Room Event Planner;

Room scan versus model viewer; STEM

Blueprint App; Rocket Recovery Landing Sim &

Data Visualization System; Depth Cam Object

Scanner; AI Audience Mood Detection

2021

Manufacturing Tech Symposium, Raytheon

Remote Visualization System

2020

RAMS Conference Presentation

3D RAM Model & Sim, Paper presentation

Texas A&M Invited Talk

Immersive Tech Centers

Bradley University Invited Talk

Immersive Technology

2019

Engineers Week, Raytheon

Stereoscopic Display & Motion Capture

Overview of stereoscopic system

RGB-depth cam skeletal capture

2017

Manufacturing Tech Symposium, Raytheon

Immersive Visualization: Roles and workflows

for developing immersive apps

2014

State Science Olympiad, UW-Stout

Student game presentations

THE PERSON

I enjoy writing, creating and discovering new things, which often include the old and forgotten. My passion is humans. What can they do with new tools, new perspectives? How far can we go?

How much farther can I move us?

Would you like my help? How far can we go?

Software Developer

Kihon Games, Tucson AZ

2012- 2012

Developed code for two mobile games, both were released for purchase: Dojo Danger and SketchPhrase. Participated in design discussions. Employed agile methods.

Senior Systems Engineer II

Raytheon Missile Systems, Tucson AZ

2007- 2012

Led simulation teams of 5 to 15 people. Integrated simulation code with software embedded code. Designed, developed, and refactored code for a generic simulation framework, genSim. Trained in program management.

Professional Tutor

The Tradition at Northgate, College Station TX

2004- 2007

Organized and conducted tutoring in math, physics, engineering, and computer science.

Lecturer & Teaching Assistant

Texas A&M University, College Station TX

1997- 2003

As a lecturer I prepped, planned, and taught computer science courses. As a teaching assistant I taught math, engineering, and computer science courses.

Software Engineer

Texas A&M University – Rec Sports, College Station TX

1998- 2000

Designed and created the Walk of Champions database and supporting software for it.

Software Developer

Customer Development Corporation, Peoria IL

1995- 1997

Developed SQL apps, an ODBC driver, and client software for a proprietary data warehouse.

PUBLICATIONS

Using Machine Learning to Focus on an Object of Interest During Remote Collaboration 2022

2022 Annual Reliability and Maintainability Symposium (RAMS IEEE), pp. 1-7, Brent Dingle, Coleman Eubanks, Keith Janasak, Avery Link, Alec Moore. 2022. <https://doi.org/10.1109/RAMS51457.2022.9893926>

3D RAM Modeling & Simulation in a Model Based Systems Environment 2020

2020 Annual Reliability and Maintainability Symposium (RAMS IEEE), pp. 1-6, Brent Dingle, Coleman Eubanks, Keith Janasak. 2020. <https://doi.org/10.1109/RAMS48030.2020.9153644>

Augmented Reality: Into the Factory and Beyond 2019

Technology Today, Issue 1, pp.16-21, K. Janasak, J. Cogliandro, B. Dingle, A. Feccia, and K. Stone. 2019.

Teaching Strategic Lean Thinking through Simulation Gaming 2018

Journal of Online Engineering Education, Vol. 9, No. 2, Article 3, Thomas A. Lacksonen and Brent Dingle. 2018. <https://onlineengineeringeducation.com/index.php/joe/article/view/22>

The Trial of Galileo: A Game of Motion Graphs 2014

Proc. of CHI PLAY '14. ACM, pp. 363-366, Ian Pommer, Michael N. Flaherty, Alicia Griesbach, Bryant Seiler, John Leitner, Kenneth Patterson, Dylan Tepp, and Brent Dingle. 2014.

Keyframing Particles of Physically Based Systems 2005

TPCG05: Eurographics UK Chapter Proceedings, University of Kent, Canterbury, United Kingdom, June 2005, pp. 11-18, Brent Dingle and John Keyser. 2005. Winner of the Robert Fletcher Prize for Best Application Paper and Presentation.