

## Dr. Ashish Amresh

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| CONTACT INFORMATION            | Research Scientist<br>Arizona State University<br>Decision Theater<br>21 E 6th St 126a,<br>Tempe, AZ 85281, USA  | <i>Mobile:</i> +1-480-452-3282<br><i>E-mail:</i> amresh@asu.edu<br><i>WWW:</i><br><a href="https://isearch.asu.edu/profile/8174">https://isearch.asu.edu/profile/8174</a> |
| RESEARCH INTERESTS             | <b>Serious games and game based learning</b> , real-time rendering, mixed reality applications, human computer interaction, game design mechanics, simulation and training, health interventions.  |   |
| CURRENT ACADEMIC APPOINTMENTS  | <b>Research Scientist</b> , Arizona State University<br>Decision Theater   | <b>June 2019 to present</b>   |
|                                | <ul style="list-style-type: none"><li>Responsible for conducting research in the area of serious games and decision making. Grant writing, business development, software architecture, emerging technologies and project management and coordination are the key duties.</li></ul>  |   |
| PREVIOUS ACADEMIC APPOINTMENTS | <b>Assistant Professor and Program Chair</b> , Embry Riddle Aeronautical University<br>Simulation Science, Games and Animation Program   | <b>July 2017 to May 2019</b>  |
|                                | <ul style="list-style-type: none"><li>Founding faculty and Program Chair of the Simulation Science, Games and Animation program. An interdisciplinary program aimed at building specialized skills that apply the game design and animation process towards building interactive simulations for the purposes of education, training and research.</li></ul>   |   |
|                                | <b>Assistant Professor</b> , Arizona State University<br>School of Computing, Informatics, and Decision Systems Engineering  | <b>August 2014 to June 2017</b>   |
|                                | <ul style="list-style-type: none"><li>Member of the software engineering faculty and responsible for coordinating the graphics and gaming focus area offered under the bachelors in software engineering program. Member of the personalized learning research group tasked with conducting research in serious games.</li><li>Affiliations:<ul style="list-style-type: none"><li>Director, The Gaming and Interactive Lab</li><li>Faculty Affiliate, The PRIME center</li><li>Faculty Affiliate, The Decision Theater</li><li>Director, The Ultimate Technology Boot Camp</li></ul></li></ul> |   |
|                                | <b>Assistant Professor</b> , Arizona State University<br>College of Technology and Innovation  | <b>August 2011 to July 2014</b>   |
|                                | <ul style="list-style-type: none"><li>Hired by the college to create the graphics and gaming focus area for the software engineering program.</li><li>Affiliations:<ul style="list-style-type: none"><li>Faculty Affiliate, Learning Sciences Institute</li><li>Faculty Affiliate, College of Nursing, The Ohio State University</li></ul></li></ul>   |   |
| INDUSTRY EXPERIENCE            | <b>Ronin Entertainment</b> , Novato, CA<br><i>Graphics Software Engineer</i>   | <b>August 2000 to July 2003</b>   |
|                                | <ul style="list-style-type: none"><li>Built a custom graphics engine for the XBOX console.</li><li>Shipped a XBOX launch game "Bruce Lee Quest of the Dragon".</li><li>Worked in an interdisciplinary setting consisting of artists, designers and programmers.</li></ul>  |   |

## EDUCATION

**Arizona State University**, Tempe, AZ

Ph.D., Computer Science, **May 2011**

- Thesis Topic: *Smooth Surfaces for Video Game Development*
- Adviser: Professor Gerald Farin
- Co-Adviser: Professor Anshuman Razdan
- Area of Study: Curves and Surfaces

M.S., Computer Science, **May 2000**

- Thesis Topic: *Adaptive Subdivision Schemes for Triangular Meshes*
- Adviser: Professor Gerald Farin
- Co-Adviser: Professor Anshuman Razdan
- Area of Study: Curves and Surfaces

## SKILLS

Programming: OpenGL, WebGL, Unity and Unreal Game Engines, C++, Java, JavaScript, C#, C, Python.

Research and Development: Statistics, Data Analytics, Ideation, Software Life-cycle, Teamwork, Agile/SCRUM, Project Management.

## PUBLICATIONS

I have included a subset of my publications that are most relevant to this particular job position

## REFEREED JOURNAL PUBLICATIONS

- [1] **Development of a Mobile, Avatar-based Application to Monitor Teen's Personal Body Shape Goals.** (Lyles, Annmarie, Ashish Amresh, Michael Todd, and Rebecca E. Lee), *Annals OF Behavioral Medicine*, Vol. 51, 233, 2017. Impact Factor 4.2.
- [2] **A Mobile, Avatar-Based App for Improving Body Perceptions Among Adolescents: A Pilot Test.** (Lyles, Annmarie A., Ashish Amresh, Jennifer Huberty, Michael Todd, and Rebecca E. Lee) *JMIR serious games* Vol 5, no. 1, 2017. Impact Factor 3.32.
- [3] **The Use of a Kiosk-model Bilingual Self-triage System in the Pediatric Emergency Department** (Madhumita Sinha, Kai-Ning Khor, Ashish Amresh, David Drachman, Alan Frechette), *In Pediatric Emergency Care*, LWW, volume 30, pp. 63-68, 2014. Impact factor 0.891.
- [4] **Remote Control and Visualization of Scanning Probe Microscopes via the Web** (Anshuman Razdan, Junyi Sun, Naresh Kumar Bade, Ashish Amresh, BL Ramakrishna, Ed Ong), *In Proceedings of the Royal Microscopy Society*, volume 35, pp. 279-305, 2000.

## CONFERENCE PUBLICATIONS

- [1] **Real-time stealth intervention for motor learning using player flow-state.**(Tadayon, R., Amresh, A., McDaniel, T., and Panchanathan, S.) *In 2018 IEEE 6th International Conference on Serious Games and Applications for Health (SeGAH)* (pp. 1-8). IEEE, 2018.
- [2] **Towards a Home-based Virtual Reality Game System to Promote Exercise.** (Ashish Amresh, and Rahul Salla), *In Proceedings of the 50th Hawaii International Conference on System Sciences*, 2017.

- [3] **Development and Use of a Tablet-based Resuscitation Sheet for Improving Outcomes during Intensive Patient Care** (Wasif Bokhari \*\*, Vimla L Patel, Ayan Sen, Ashish Amresh), *In Proceedings of the 6th International Conference on Digital Health Conference, ACM*, pp. 17-21, 2016. Acceptance rate 24%.
- [4] **GameScapes and SimApps: New Techniques for Integrating Rich Narratives With Game Mechanics** (Ashish Amresh, David Clarke, Doug Beckwith), *In Proceedings of the 8th European Conference on Games Based Learning*, volume 1, pp. 18-25, 2014. Acceptance rate 55%.
- [5] **ScrumTutor: A Web-based Interactive Tutorial for Scrum Software development** (Sindhura Potineni \*\*, Srividya Bansal, Ashish Amresh), *In Proceedings of the International Conference on Advances in Computing, Communications and Informatics (ICACCI)*, pp. 1884-1890, 2013. Acceptance rate 25%.
- [6] **UAV Sensor Operator Training Enhancement Through Heat Map Analysis** (Ashish Amresh, John Femiani, Jason Fairfield \*, Adam Fairfield \*), *In Proceedings of the 17th International Conference on Information Visualisation*, pp. 457-461, 2013.
- [7] **Methods for Approximating Loop Subdivision using Tessellation Enabled GPUs** (Ashish Amresh, John Femiani, Christoph Fünfzig), *In Advances in Visual Computing*, Springer Berlin Heidelberg, pp. 115-125, 2012.
- [8] **Semi-uniform, 2-different Tessellation of Triangular Parametric Surfaces** (Ashish Amresh, Christoph Fünfzig), *In Advances in Visual Computing*, Springer Berlin Heidelberg, pp. 54-63, 2010.

BOOKS

- [1] **Smooth Surfaces for Video Game Development** (Ashish Amresh), *Ph.D. Thesis*, Arizona State University, 2011.
- [2] **Unreal Game Development** (Ashish Amresh, Alex Okita), CRC Press, 2010.  
Unreal Game Development is a book written for the enthusiast/hobbyist game developer and provides a comprehensive set of instruction in all areas of game development that includes level design, game art and game programming. The book has sold over 2000 copies worldwide and has been adopted at several high schools.
- [3] **Subdivision Schemes for Interpolating Subdivision of Polygonal Meshes and Adaptive Subdivision of Triangular Meshes** (Ashish Amresh), *Masters Thesis*, 2000.

BOOK CHAPTERS

- [4] **Adaptive Subdivision Schemes for Triangular Meshes** (Ashish Amresh, Gerald Farin, Anshuman Razdan), *In Hierarchical and Geometrical Methods in Scientific Visualization*, Springer Berlin Heidelberg, pp. 319-327, 2003.
- [5] **Game Based Behavior Change Methods in Healthcare: The Case of Obesity** (Ashish Amresh, Ann Lyles, Kevin Gary), *In Cognitive Informatics in Health and Biomedicine*, Springer International Publishing, pp. 347-366, 2017.

INVITED TALKS

- [1] *ERAU's Simulation Science Games and Animation program*, ERAU President's Forum, 2018.
- [2] *The Entrepreneurship Arcade*, ASU Women in Philanthropy finalist presentation, 2016.
- [3] *Using Burst Games in Classrooms: Challenges and Impacts*, ASU GSV Summit, 2015, Panelist.

- [4] *Making Apps and Games to Improve Computing (MAGIC)*, ASU Women in Philanthropy finalist presentation, 2015.
- [5] *Mobile Games as Simulation Exercises for Medical Residents*, Cleveland Clinic, 2015 (Invited).
- [6] *Creating Effective Games that Scale*, WICHE Cooperative for Educational Technologies (WCET) Annual Conference, 2013 (Invited).
- [7] *More than Just a Game: Best practices in Game Design*, International Communication Association (ICA) Conference, 2012 (Invited).
- [8] *Using primary school classroom computer gaming for number sense*, National Council for Teachers in Mathematics (NCTM) Conference, 2012 (Invited).
- [9] *Teaching Singapore Math using Games*, TedX ASUwest, 2011.

AWARDS

Arizona State University

- ASU President's Award for Innovation, 2012
- College of Technology and Innovation Faculty Mentor Award , 2011
- Microsoft Outstanding Educator Award , 2009
- Graduate College Teaching Excellence Award , 2005
- College of Engineering Student Leadership Award , 2005

STUDENT  
ADVISING

***Current Students***

**Vipin Verma**

Doctoral student in Simulation, Modeling and Applied Cognitive Science, Arizona State University.

Topic: Stealth Assessment in Content Agnostic Games.

Role: Chair.

Expected graduation: Dec 2019.

***Past Students***

**Ramin Tadayon**

Doctoral student in Computer Science, Arizona State University.

Topic: **A Person-Centric Design Framework for At-Home Motor Learning in Serious Games, Dec 2017**

Role: Committee member; Chair: Dr. Sethuraman Panchanathan.

Current Employment: Hiroshima University, Japan

**Tyler Baron**

Doctoral student in Simulation, Modeling and Applied Cognitive Science, Arizona State University.

Topic: **Designing Context Agnostic Burst Game Mechanics for Educational Games, May 2017**

Role: Chair.

Current Employment: Arizona State University, Tempe, AZ.

**Somnath Shahapurkar**

Doctoral student in Computer Science, Arizona State University.

Topic: **Crossing the Utile-Chasm: Framework for Productizing Machine-learning Algorithms in Dynamic Real-world Scenarios, December 2016**

Role: Committee member; Chair: Dr. Huan Liu.  
Current Employment: FICO systems.

**Shujian Ke**

Masters thesis student in Software Engineering, Arizona State University.  
Topic: **Real-time Rendering in Games, May 2017**  
Role: Chair.

**Chenyang Li**

Masters thesis student in Computer Science, Arizona State University.  
Topic: **Ambient Occlusion Techniques via the Web, May 2017**  
Role: Chair.  
Current Employment: ESRI Systems

**Sreenivas Shenoy**

Masters thesis student in Computer Science, Arizona State University.  
Topic: **An Adaptive Time Reduction Technique for Video Lectures, May 2016**  
Role: Chair.  
Current Employment: Roche

**Mandar Patwardhan**

Masters thesis student in Software Engineering, Arizona State University.  
Topic: **Mobile Application for the Prevention of Anxiety in Children, May 2016**  
Role: Committee member; Chair: Dr. Kevin Gary  
Current Employer: Mathworks

**Zachary Moore**

Honors student in Software Engineering, Arizona State University.  
Topic: **Enhancing Student Learning through Adaptive Sentence Generation, May 2016**  
Role: Honors thesis director.

**Nicholas Carney**

Honors student in Software Engineering, Arizona State University.  
Topic: **Oculus Exercise: A Fitness Promotion Tool, May 2016**  
Role: Honors thesis director.

**Jayson Chesler**

Honors student in Journalism, Arizona State University.  
Topic: **Paid to play: Games as mass communication tools, May 2016**  
Role: Honors thesis second reader; Director: Retha Hill

**Colin Garttmeier**

Honors student in Digital Culture, Arizona State University.  
Topic: **Distant - An Original Game, May 2016**  
Role: Honors thesis second reader; Director: Dr. Dan Collins

**Peter Johnson**

Honors student in Computer Science, Arizona State University.

Topic: **Keyboard Input Biometric Authentication Spoofing, May 2016**  
Role: Honors thesis second reader; Director: Dr. Brian Nelson

#### **Wasif Bokhari**

Masters thesis student in Computer Science, Arizona State University.  
Topic: **Development and use of an iPad-based resuscitation code blue sheet for improving resuscitation outcomes during intensive patient care**, December 2015.  
Role: Co-Chair; Co-Chair: Dr. Vimla Patel  
First employment: Intel.

#### **Abha Uphadhyay**

Masters thesis student in Computer Science, Arizona State University.  
Topic: **Analyzing the effect of Open Learner Model in a Teachable learning system Represented through a Feedback system**, December 2015.  
Role: Committee member; Chair: Dr. Erin Walker.  
First employment: American Express.

#### **Rebecca Little**

Honors student in Software Engineering, Arizona State University.  
Topic: **Exploring the Virtual Reality Threshold using the Oculus Rift**, May 2015.  
Role: Honors thesis director.  
First employment: General Motors.

#### **Adit Shah**

Masters student in Software Engineering, Arizona State University.  
Topic: **Improving E-Learning Videos using Personalization and Social Signals**, May 2014.  
Role: Applied project adviser.  
First employment: Ticketmaster.

#### **Sindhura Potineni**

Masters student in Software Engineering, Arizona State University.  
Topic: **ScrumTutor: A Web-based Interactive tutorial for Scrum Software Development**, May 2013.  
Role: Applied project co-adviser.  
First employment: Intel.

#### **Ramin Tadayon**

Honors student in Computer Science, Arizona State University.  
Topic: **Socially Relevant Simulation Games**, May 2012.  
Role: Honors thesis director.  
First employment: Currently pursuing PhD in Computer Science.

#### PROFESSIONAL SERVICE

#### **Conference Service**

- Papers Review Committee, ACM Special Interest Group in Computer Science Education (SIGCSE), 2011 - present
- Papers Review Committee, Serious Games and Applications for Health (SeGAH, IEEE), 2016 - present
- Papers Review Committee, Frontiers in Engineering Education, 2011 - present
- Papers Review Committee, European Conference on Game Based Learning, 2014 - present
- Session Chair, ACM Special Interest Group in Computer Science Education (SIGCSE), 2013
- Papers Review Committee, Foundations of Digital Games, 2012

### Journal Service

- Reviewer, *Journal of Systems and Software*, 2015 - present
- Reviewer, *IEEE Transactions on Engineering Education*, 2015 - present
- Reviewer, *Journal of Biomedical Informatics*, 2015 - present
- Reviewer, *ACM Transactions on Computer Science Education*, 2016 - present
- Reviewer, *Journal of Medical Internet Research*, 2016 - present
- Reviewer, *Journal of System Architecture*, 2017 - present

### PROFESSIONAL MEMBERSHIPS

- Association of Computing Machinery
- North American Gaming and Simulation Association
- Digital Games Research Association
- Arizona Science Education Leadership Association
- International Game Developer Association
- Entertainment Software Association

### IN MEDIA

State of the Art Technologies, *Animation Career Review*, November, 2017 <https://tinyurl.com/yfzcpjgp>

Augmented reality comes to region, *DC courier news article*, October, 2017 <https://www.dcourier.com/news/2017/oct/04/augmented-reality-comes-region/>

How do you meet demand to fill tech-related jobs in AZ? Get kids interested, *Cronkite News*, October 2016. <https://tinyurl.com/yavgcs4q>

Cool ASU summer programs bring on learning and fun, *ASU Now Article*, February 26, 2016. <http://fw.to/KBGzfDR>

Project App Maker Pro aims to increase high schoolers' interest in STEM fields, *ASU Now Article*, January 19, 2016. <http://tinyurl.com/zp5uy86>

The flipped classroom is all the buzz, *Monterey Herald Education*, January 1, 2016. <http://www.montereyherald.com/article/NF/20160109/NEWS/160109805>

Why children's worries should be everyone's worries, *ASU Now Article*, Nov 3, 2015. <http://tinyurl.com/jgejnx2>

Interactive learning: ASU Online to pilot environmental science games, *ASU Now Article*, March 31, 2015. <http://tinyurl.com/h34f48a>

The Spark App League, *PBS: Arizona Horizons hosted by Ted Simmons*, February 19, 2014. <https://www.azpbs.org/arizonahorizon/detail.php?id=2365>

Medicine increasingly turning to video games to speed recovery, *ABC 15 Arizona*, May 5, 2013. <http://tinyurl.com/hz29aar>

2012 President's Award for Innovation, *ASU Now Article*, April 19 15, 2012. <https://asunow.asu.edu/content/2012-presidents-award-innovation>

Camp Game offers students chance to develop games, *ASU Now Article*, Feb 28, 2011. <http://tinyurl.com/jgn762k>

Computer gaming skills opening career paths, *ASU Now Article*, July 12, 2010. <http://tinyurl.com/zrzlnnr>

Game on! Students Harness Game Design Skills at Camp, *NFV News*, August 15, 2010. <http://www.nfvzone.com/news/2010/08/15/4956756.htm>

### MORE INFORMATION

More information about me can be found at <https://faculty.erau.edu/Ashish.Amresh>.