

# Sasha Azad

PH.D. CANDIDATE, DEPARTMENT OF COMPUTER SCIENCE • NORTH CAROLINA STATE UNIVERSITY (NCSU)

Raleigh, North Carolina

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🎓 Google Scholar | 🐙 Github | 🔗 LinkedIn | 🐦 Twitter

## 🔍 Research Interests

*Simulation & Modeling, Autonomous Agents, Social Agents, Human-Centered Artificial Intelligence, Computational Creativity, Story Technology, Symbolic AI, Cognitive Systems, Augmented & Mixed Reality Systems*

A Ph.D. Computer Science candidate with 5 years of professional experience and 10+ years of engineering research experience. My human-centered doctoral research combines techniques from artificial intelligence, research engineering, planning, and multi-modal and simulation modeling into a modular, flexible toolkit for real-world decision-making. My work has been deployed in the entertainment, military, education, and healthcare industries.

## 🎓 Education

### North Carolina State University

PH.D. IN COMPUTER SCIENCE

+ Advisors: Dr. Arnav Jhala, Dr. Chris Martens

+ Thesis: Little Computer People: A Taxonomy and Social Simulation Sandbox

2017 - 2024

Raleigh, NC

### Georgia Institute of Technology

M.S. COMPUTER SCIENCE

+ Advisor: Dr. Mark Riedl

2014 - 2016

Atlanta, GA

### University of Mumbai

B. ENGG. COMPUTER ENGINEERING

+ Advisor: Dr. Sunil Surve

+ Research: Procedural Level Generation for Augmented Reality Games

2007 - 2011

Mumbai, India

## 🏢 Professional Experience

### Ph.D. Research Intern

IBM RESEARCH, ALMADEN LABS - **FUTURE OF WORK**

- + Supported executive-level decision-making and company-wide healthcare policies to bring employees safely back to work while mitigating employee health risks and the in-person viral spread of COVID-19.
- + Worked with a cross-functional team of 10+ research scientists, engineers, and an epidemiologist.
- + Went beyond the scope of work — redesigned, conceptualized, and deployed a digital twin simulation of the company from scratch to test corporate healthcare policies while exceeding original timelines and goals.
- + Mathematically modeled an engine (patent in progress) capable of simulating population-level deterministic and stochastic events with greater granularity than has been possible before, improving run time from days to minutes.

May 2022 - Aug 2022

San Jose, CA

### Research Lab Associate

DISNEY RESEARCH - **STORY TECHNOLOGIES**

- + Supported executive Disney Imagineering, operations research, and park officials by scaling the number of mixed-reality experiences capable of being designed and deployed concurrently for guests in the theme parks.
- + Designed human-centered AI support for deploying interactive multiplayer AR/MR experiences while reasoning about player interactions under temporal uncertainty and scheduling real-world resources.
- + Conception and implementation of a mathematical mixed-integer linear programming formulation of the problem.
- + Empirically evaluated its scalability over large narrative instances to inform user control and narrative generation.

Sep 2016 - Jun 2017

Pittsburgh, PA

### Consultant

CAPGEMINI

- + Developed mobile applications for clients to access enterprise data and enable cross-domain collaboration.
- + Developed information visualization dashboards for clients to enable cross-domain collaboration and analysis.
- + Moved to Capgemini due to a corporate acquisition of the Bayer BBS department.

Aug 2012 - Jun 2014

Mumbai, India

## Application Analyst

BAYER - BAYER BUSINESS SERVICES (BBS)

Jun 2011 - Aug 2012

Mumbai, India

- + Initiated the first mobile development team at Bayer. Trained and mentored a team of 4.
- + Developed and deployed augmented reality (AR) and mixed reality (MR) Enterprise and Consumer mobile applications.

## 🎓 Academic Research Experience

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### Graduate Research Assistant

Jan 2018 – Present

NORTH CAROLINA STATE UNIVERSITY - **POEM LAB** & **ARNAV LAB**

Raleigh, NC

- + Supporting novice and experienced researchers and game designers with the design of a multi-agent simulation framework, authoring tool, and engine capable of complex simulation of societies of social, digital humans.
- + Mathematically modeled an engine (patent in progress) capable of simulating population-level deterministic and stochastic events and multi-agent interactions with greater granularity than has been possible before.
- + Designed and developed human-centered tools using a participatory research design process that takes into account human behaviors, cognitive science, artificial intelligence, and social science.

### Graduate Research Assistant

Jan 2015 – Aug 2016

GEORGIA INSTITUTE OF TECHNOLOGY - **EILAB**, **DILAB** & **RNOG**

Atlanta, GA

- + Research and development of procedural content level generation algorithms, game engines, AI generative agents, and AI non-player characters (NPCs) for Augmented and Mixed Reality (AR, MR) Environments.
- + Research and design of a knowledge extraction tool for financial news capable of extracting deep understanding from text to improve the precision, relevance, and fertility of retrieved knowledge using analogical reasoning.
- + Created new open data frameworks, built scalable systems and APIs to facilitate student innovation, and developed new modes of interaction. Worked with student groups harnessing the APIs created for entrepreneurial launches.

## 👨‍🏫 Teaching

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### CSC 000 - AI for Locative Interactive Narratives

INSTRUCTOR OF RECORD

Fall 2020

NCSU

### CSC 584 - Computer Models of Interactive Narrative

GRADUATE TEACHING ASSISTANT

Fall 2020

NCSU

### CSC 584 - Building Game AI

GRADUATE TEACHING ASSISTANT

Spring 2020

NCSU

### CSC 316 - Data Structures and Algorithms

GRADUATE TEACHING ASSISTANT

Spring 2018

NCSU

### CSC 316 - Data Structures and Algorithms

GRADUATE TEACHING ASSISTANT

Fall 2017

NCSU

### CS 4261/8803 MAS - Mobile Applications and Services

GRADUATE TEACHING ASSISTANT

Spring 2015

Georgia Tech

## 📄 Publications

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### PHD DOCUMENTS

- [1] **S. Azad**. "Little Computer People: A taxonomy and framework for social simulation". Doctoral dissertation. North Carolina State University, 2023. URL: <https://sashazd.me/publication/phd-proposal/>.
- [2] **S. Azad**. "Lyra: Simulating Believable Opinionated NPCs (Extended)". Doctoral dissertation. North Carolina State University, 2019. URL: <https://sashazd.me/publication/phd-quals/>.

### JOURNAL PAPERS

- [15] **S. Azad**, D. Beymer, A. Pillai, T. Zimmerman, E. Seabolt, H. Bulu, C. Potts, V. Burrowes, V. Mukherjee, and A. Jhala. "Clockwork: A Discrete Event and Agent-Based Social Simulation Framework". In: JAAMAS (In Review), 2023. doi: [10.21203/rs.3.rs-3740215/v1](https://doi.org/10.21203/rs.3.rs-3740215/v1).
- [16] **S. Azad** and C. Martens. "Little computer people: A survey and taxonomy of simulated models of social interaction". In: *Proceedings of the ACM on Human-Computer Interaction* 5.CHI PLAY (2021), pp. 1–30. doi: <https://doi.org/10.1145/3474672>.

### CONFERENCE PROCEEDINGS

- [3] **S. Azad**, J. Wellnitz, L. Garcia, and C. Martens. “Anthology: A Social Simulation Framework”. In: *Proceedings of the AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*. Vol. 18. 1. 2022, pp. 224–231. DOI: <https://doi.org/10.1609/aiide.v18i1.21967>. [~25% acceptance rate].
- [4] A. Striner, **S. Azad**, and C. Martens. “A Spectrum of Audience Interactivity for Entertainment Domains”. In: *Interactive Storytelling*. Ed. by R. E. Cardona-Rivera, A. Sullivan, and R. M. Young. Springer International Publishing, 2019, pp. 214–232. ISBN: 978-3-030-33894-7. DOI: [https://doi.org/10.1007/978-3-030-33894-7\\_23](https://doi.org/10.1007/978-3-030-33894-7_23).
- [5] **S. Azad**. “Towards generating narratives for the real world”. In: *Proceedings of the 2018 AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE)*. Vol. 14. 1. 2018, pp. 282–284. DOI: <https://doi.org/10.1609/aiide.v14i1.13008>.
- [6] **S. Azad**, J. Xu, H. Yu, and B. Li. “Scheduling Live Interactive Narratives with Mixed-Integer Linear Programming”. In: *Thirteenth AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment Conference (AIIDE)*. 2017. DOI: <https://doi.org/10.1609/aiide.v13i1.12934>.
- [7] **S. Azad**, C. Saldanha, C.-H. Gan, and M. O. Riedl. “Procedural Level Generation for Augmented Reality Games”. In: *AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE)*. 2016. DOI: <https://doi.org/10.1609/aiide.v12i1.12850>. [~27.7% acceptance rate].
- [8] S. Rugaber, S. Bhati, V. Goswami, E. Spiliopoulou, **S. Azad**, S. Koushik, R. Kulkarni, M. Kumble, S. Sarathy, and A. Goel. “Knowledge extraction and annotation for cross-domain textual case-based reasoning in biologically inspired design”. In: *Case-Based Reasoning Research and Development: 24th International Conference, ICCBR 2016, Atlanta, GA, USA, October 31–November 2, 2016, Proceedings 24*. Springer International Publishing, 2016, pp. 342–355. URL: [https://link.springer.com/chapter/10.1007/978-3-319-47096-2\\_23](https://link.springer.com/chapter/10.1007/978-3-319-47096-2_23).

## REFEREED WORKSHOP PAPERS

- [9] J. Jonasson, B. Lech, **S. Azad**, and C. Martens. “Intertwining World and Narrative Generation for a Mobile Roleplaying Game”. In: *Proceedings of the 2021 AAAI AIIDE Workshop on Experimental AI in Games (EXAG)*. 2021. URL: <https://ceur-ws.org/Vol-3217/paper2.pdf>.
- [10] B. Lech, **S. Azad**, J. Wellnitz, J. Jonasson, and C. Martens. “Designing a Combined World and Story Procedural Content Generation Engine”. In: *Proceedings of the 2021 AAAI AIIDE Workshop on Experimental AI in Games*. 2021. URL: <https://ceur-ws.org/Vol-3217/paper12.pdf>.
- [11] **S. Azad** and C. Martens. “Lyra: Simulating Believable Opinionated Virtual Characters”. In: *Proceedings of the 2019 AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment (AIIDE)*. Vol. 15. 1. 2019, pp. 108–115. DOI: <https://doi.org/10.1609/aiide.v15i1.5232>.
- [12] C. Martens, O. Iqbal, **S. Azad**, M. Ingling, A. Mosolf, E. McCamey, and J. Timmer. “Villanelle: Towards Authorable Autonomous Characters in Interactive Narrative”. In: *Joint AIIDE Workshop on Intelligent Narrative Technologies and Workshop on Intelligent Cinematography and Editing (INT-WICED)*. Ed. by H.-Y. Wu, M. Si, and A. Jhala. Edmonton, AB, Canada: <http://ceur-ws.org>, Nov. 2018. URL: <http://ceur-ws.org/Vol-2321/paper4.pdf>.
- [13] **S. Azad** and C. Martens. “Addressing the Elephant in the Room: Opinionated Virtual Characters”. In: *Proceedings of the AAAI AIIDE Workshop on Experimental AI in Games (EXAG)*. 2018. URL: [https://ceur-ws.org/Vol-2282/EXAG%5C\\_123.pdf](https://ceur-ws.org/Vol-2282/EXAG%5C_123.pdf).
- [14] **S. Azad**, C. Saldanha, C.-H. Gan, and M. Riedl. “Mixed Reality Meets Procedural Content Generation in Video Games”. In: *Proceedings of the AAAI Conference on Artificial Intelligence and Interactive Digital Entertainment*. Vol. 12. 2. 2016, pp. 22–26. DOI: <https://doi.org/10.1609/aiide.v12i2.12898>.

## Projects

### SUMMARY

 **Intelligent, Autonomous Agents and Non-Player Characters.** Simulating social digital humans for virtual worlds.

 Social Agents	[3, 5, 11, 13, 15, 16]	2011, 2017, 2022
 AI & Health	[15], See also: IBM Research internship	2022 – present
 Authoring Tools	[3, 12]	2018, 2021 – Present
 Knowledge and Bias Dissemination	[11, 13]	2017 – 2019
 World Generation	[9, 10, 13]	2017 – 2019

 **Artificial Intelligence and Locative Narrative Experiences** AI experience management and procedural content generation for AR/MR environments

 Level Generation for AR/MR	[7, 14]	2015 – 2016
 Experience Management	[6], See also: Disney Research internship	2016 – 2017
 Audience Interaction	[4]	2018

## SELECTIVE PROJECTS

### **Social Intelligence and Believable Social Characters**

*Sep 17 - present*

- + Classified a multi-agent taxonomy and ruleset using an in-depth analysis of a selection of social simulation projects.
- + Defined models for agent behaviour using themes of communication, knowledge dissemination, and relationships.
- + Designed and evaluated a simulation authoring tool using an iterative, participatory research design process
- + My work allows scientists to better reproduce and evaluate existing models, collaborate on standards, communicate methodologies, and allow for a more rigorous model-to-model analysis in the process of social simulation.

### **FEMA - Emergency Evacuation Management**

*May 23 - present*

- + Simulating digital twins of small populations to improve the low turnout of humans during emergency evacuation orders given to communities during catastrophic natural disasters such as hurricanes, or wildfires.
- + Takes into account social interactions, influence, bias, and emergency orders knowledge dissemination using Lyra [11].
- + Simulates a small town, with movements, social interactions, and social relationships between members of the population used to disseminate evacuation orders, and the decision to evacuate using Anthology [3].

### **Clockwork: Autonomous, Intelligent Agent Modeling Engine**

*May 22 - Aug 22*

- + Conception, design, and development of a granular, behavior-level simulation engine of autonomous agents using hybrid Discrete Event Simulation (DES) and Agent-Based Social Simulation (ABSS) methodologies.
- + Ability to simulate population-level deterministic and stochastic events
- + Ability to affect change in agent models due to the influence of other agents through event-based emergent interactions
- + Deployment: Clockwork was used to test corporate healthcare policies on how to safely bring employees back to the workplace. Risk modeling included inputs from IoT building monitoring, resource allocation and crowding patterns.

### **Lyra: Dynamic Opinion and Knowledge Propagation of Misinformation and Bias**

*Sep 17 - Jun 18*

- + Investigating the problem of group formations and group opinion and belief modeling for a virtual society of humans
- + Modeled knowledge diffusion, political polarization, disinformation, and its effect on relationships and interactions.
- + Considers the effects of real (e.g., book clubs, classmates, etc.) and virtual (e.g., news and media sources, etc.) communities, relationships, and membership affinities on virtual human opinions and agent interactions.

### **Temporal Scheduling of AR/MR Experiences Under Uncertainty**

*Sep 16 - May 17*

- + Investigated the scheduling of a multiplayer interactive game, allowing multiple simultaneous games, reasons under temporal uncertainty, schedules resources, and handles non-linear plot choices.
- + Formulated the problem as a mathematical mixed-integer linear programming constraint satisfaction problem.
- + Empirically evaluated its scalability over large narrative instances to inform the control and generation of the narrative.

### **AI Narrative Drama and Experience Manager**

*Sep 14 - Dec 14*

- + Developed a Python AI Drama and Experience Manager that used AI planning and simulation techniques to generate a murder mystery narrative (with simulated motives) for a set of virtual characters.
- + An AI Game Master controls when to divulge clues and plot lines to players. A Quest Generator improves gameplay.
- + Evaluated our generated story and gameplay with a human subject study for believability and expressive range.

### **Cognopsi - A Knowledge Extraction Tool**

*Aug 15 - Jan 16*

- + Research and development on a knowledge extraction tool that extracts deep understanding from text to improve the precision, relevance, and fertility of retrieved responses by direct matching and analogical reasoning.

### **Unlock the Box (Civic Engagement)**

*Oct 15 - May 16*

- + Designed and developed an API to improve voter turnout and encourage civic participation from 53% to 62%.
- + Worked with the New Georgia Project's Director to implement the REST Voting API for the State of Georgia.

### **Player Modeling and Dynamic Level Adjustment**

*Mar 15 - May 15*

- + Performed player modeling using machine learning to create a computational model that approximated a player's behavior and skill level.
- + Developed an AI opponent agent that used the results from player modeling to select play strategies that tailored its difficulty to match the player's current characterization, improving or worsening dynamically with the player.
- + Conducted a human-subject study to evaluate the AI opponent agent - users found the agent to be "smart", describing the agent anthropomorphically as "sneaky", "aggressive", "defensive", etc.

## **Awards and Honors**

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### AWARDS

#### **Google**

WOMEN TECHMAKERS (FORMERLY ANITA BORG) SCHOLARSHIP

*2020*

**\$10,000**

#### **Society of Women Engineers (SWE) and Motorola**

MOTOROLA SOLUTIONS FOUNDATION ENGINEERING SCHOLARSHIP

*2020*

**\$8,000**

## Girls Make Games (GMG)

GIRLS MAKE GAMES (GMG) FELLOWSHIP

2020

\$1,500

## North Carolina State University

UNIVERSITY GRADUATE FELLOWSHIP

2017

\$4,000

## GRANTS

### National Science Foundation (NSF)

NSF ICORPS GRANT RECIPIENT

Sasha Azad (Entrepreneurial Lead), Harold Solomon (Business Mentor), Evangelia Spiliopoulou (Graduate Student)

2015 – 2015

\$50,000

Georgia Institute of Technology

## HONORS

### Fellow - Women In Games International (WIGI)

2022

WOMEN IN GAMES INTERNATIONS (WIGI)

### Best full paper award: [4]

2019

INTERNATIONAL CONFERENCE ON INTERACTIVE DIGITAL STORYTELLING (ICIDS)

### Elected - Senator of the Year

2016

GRADUATE STUDENT GOVERNMENT, GEORGIA INSTITUTE OF TECHNOLOGY

### Elected - Rookie Senator of the Year

2015

GRADUATE STUDENT GOVERNMENT, GEORGIA INSTITUTE OF TECHNOLOGY

## Institutional Service

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### CSC PhD Prospective Student Recruitment Week

MEMBER

Spring 2020 – Present

NCSU

### Department Strategic Planning Faculty Committee

GRADUATE STUDENT BODY REPRESENTATIVE

Fall 2017 - Fall 2022

NCSU

### CSC PhD Prospective Student Recruitment Week

ORGANIZER

Spring 2019

NCSU

### Graduate Student Government Association

ELECTED TO EXECUTIVE LEGISLATURE

Fall 2015 - Spr 2016

Georgia Tech

### Graduate Student Government Association

SENATOR, COLLEGE OF COMPUTING

Fall 2014 - Spr 2016

Georgia Tech

### Career, Research & Innovation Development Conference (CRIDC) Committee

ORGANIZING MEMBER AND TEAM LEAD

Fall 2014

Georgia Tech

## Outreach

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### SPARCS (Students in Programming, Robotics, and Computer Science)

VOLUNTEER

2018 – 2021

Raleigh, NC

A middle school outreach program where students are taught computer science concepts. Lessons I taught include game development using Kodu and GameMaker, introduction to algorithms, web design, and robotics with LEGO Mindstorms.

### Second Chance Pet Adoptions Animal Shelter

VOLUNTEER, FOSTER PARENT

2017 – 2020

Raleigh, NC

### Fulton County Animal Services

VOLUNTEER, FOSTER PARENT

2014 – 2016

Atlanta, GA

### Fulton County Library

VOLUNTEER

2015, 2016

Atlanta, GA

### P.A.W.S. Animal Shelter

VOLUNTEER

2010 – 2013

Mumbai, India

### Dr. Sarala's Elderly Care Home

VOLUNTEER

2007 – 2014

Mumbai, India

# Professional Activities – Conference Organization

## SUMMARY

1	<b>Chair Positions</b>
2	<b>Organizer</b>
26	<b>Program Committee Member/Reviewer</b>
1	<b>Community-Based Conference Attendee</b>
30	<b>Total Participation</b>

## CHAIR POSITIONS

### **AAAI AIIDE Experimental AI in Games Workshop**

CO-CHAIR

*October 18-20, 2020*

*Virtual*

## ORGANIZER

### **AAAI Conference on Artificial Intelligence and Digital Entertainment (AIIDE)**

PUBLICITY CO-CHAIR

*October 24-28, 2022*

*Pomona, CA*

### **AAAI Conference on Artificial Intelligence and Digital Entertainment (AIIDE)**

PUBLICITY CO-CHAIR

*October 8-12, 2019*

*Atlanta, GA*

## JOURNAL REVIEWS

### **IEEE Transactions on Games (ToG)**

*2023*

## PROGRAM COMMITTEE MEMBER

AAAI Conference on Artificial Intelligence and Digital Entertainment (AIIDE)

*October 8-12, 2023*

AAAI AIIDE Experimental AI in Games Workshop (EXAG)

*October 6-7, 2023*

IEEE Conference on Games (CoG)

*August 21-24, 2023*

International Conference on Interactive Digital Storytelling (ICIDS)

*December 4-7, 2022*

AAAI Conference on Artificial Intelligence and Digital Entertainment (AIIDE)

*October 24-28, 2022*

AAAI AIIDE Experimental AI in Games Workshop (EXAG)

*October 22-23, 2022*

International Conference on Interactive Digital Storytelling (ICIDS)

*December 7-10, 2021*

AAAI Conference on Artificial Intelligence and Digital Entertainment (AIIDE)

*October 11-15, 2021*

AAAI AIIDE Experimental AI in Games Workshop (EXAG)

*October 9-11, 2021*

International Conference on Interactive Digital Storytelling (ICIDS)

*3-6 November, 2020*

AAAI AIIDE Intelligent Narrative Technologies Workshop (INT)

*October 19-20, 2020*

AAAI Conference on Artificial Intelligence and Digital Entertainment (AIIDE)

*October 19-23, 2020*

AAAI AIIDE Experimental AI in Games Workshop (EXAG)

*October 18-20, 2020*

IEEE Conference on Games (CoG)

*August 24-27, 2020*

International Conference on Interactive Digital Storytelling (ICIDS)

*November 19-23, 2019*

AAAI Conference on Artificial Intelligence and Digital Entertainment (AIIDE)

*October 8-12, 2019*

AAAI AIIDE Experimental AI in Games Workshop (EXAG)

*October 7-8, 2019*

FDG Workshop on Procedural Content Generation (PCG)

*August 26-30, 2019*

IEEE Conference on Games (CoG)

*August 20-23, 2019*

AAAI Workshop on Knowledge Extraction from Games (KEG)

*January 27-28, 2019*

AAAI Conference on Artificial Intelligence and Digital Entertainment (AIIDE)

*November 13-17, 2018*

AAAI AIIDE Experimental AI in Games Workshop (EXAG)

*November 11-12, 2018*

IEEE Conference on Computational Intelligence and Games (CIG)

*August 14-17, 2018*

AAAI Conference on Artificial Intelligence and Digital Entertainment (AIIDE)

*October 5-9, 2017*

AAAI AIIDE Experimental AI in Games Workshop (EXAG)

*October 5-9, 2017*

## COMMUNITY-BASED CONFERENCE ATTENDANCE

*Sep 29 – Oct 2, 2020* **Grace Hopper Celebration**

## Professional Activities - Presentations

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### SUMMARY

1	<b>Special Conference Presentations</b>
2	<b>On-Campus Invited Speaker Presentations</b>
8	<b>Panels</b>
18	<b>Total Presentations</b>

### SPECIAL CONFERENCE PRESENTATIONS

#### **Towards Generating Narratives for the Real World**

AAAI AIIDE DOCTORAL CONSORTIUM

*Nov 14, 2018*  
*Alberta, Edmonton, CA*

### ON-CAMPUS INVITED SPEAKER PRESENTATIONS

#### **Generative AI in Simulated Environments**

UNIVERSITY OF MUMBAI

*Dec 15, 2018*  
*Mumbai, India*

#### **Building and Sustaining an Innovation Ecosystem**

ENGR 2811 - HACKING FOR DEFENSE, UNIVERSITY OF PITTSBURGH

*Feb 20, 2017*  
*Pittsburgh, PA*

### PANELIST

#### **Computer Science Research - PhD Mentoring Panel**

CSC 801 - INTRODUCTION TO PH.D. COMPUTER SCIENCE RESEARCH, NC STATE UNIVERSITY

*Nov 15, 2022*  
*Raleigh, NC*

#### **NC State University - Graduate Student Panel**

CSC 295 - UNDERGRADUATE RESEARCH COURSE: IS GRAD SCHOOL FOR ME?

*Sep 2, 2022*  
*Raleigh, NC*

#### **Computer Science Research - PhD Mentoring Panel**

NORTH CAROLINA STATE UNIVERSITY

*Mar 15, 2022*  
*Raleigh, NC*

#### **Computer Science Research - PhD Mentoring Panel**

NORTH CAROLINA STATE UNIVERSITY

*Mar 1, 2021*  
*Virtual*

#### **Computer Science Research - PhD Mentoring Panel**

NORTH CAROLINA STATE UNIVERSITY

*Mar 21, 2020*  
*Raleigh, NC*

#### **Computer Science Research - PhD Mentoring Panel**

CSC 801 - INTRODUCTION TO PH.D. COMPUTER SCIENCE RESEARCH, NC STATE UNIVERSITY

*Oct 15, 2019*  
*Raleigh, NC*

#### **Computer Science Research - PhD Mentoring Panel**

NORTH CAROLINA STATE UNIVERSITY

*Mar 20, 2019*  
*Raleigh, NC*

#### **AI and Procedural Content Generation in Mixed Reality Environments**

MICROSOFT: A HOLOLENS OVERVIEW, GEORGIA GAME DEVELOPER ASSOCIATION (GGDA)

*Sep 13, 2016*  
*Atlanta, GA*

## Mentoring

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### NORTH CAROLINA STATE UNIVERSITY

#### **Luis Garcia**

PH.D. COMPUTER SCIENCE → PH.D. COMPUTER SCIENCE, NORTHEASTERN UNIVERSITY

*Fall 2021 - present*

#### **Jennifer Welnitz**

PH.D. COMPUTER SCIENCE

*Fall 2019 - Spring 2022*

#### **Eddy Huang**

B.S. COMPUTER SCIENCE → PH.D. COMPUTER SCIENCE, RICE UNIVERSITY

*Fall 2020 - Fall 2021*

#### **Brenden Lech**

B.S. COMPUTER SCIENCE → M.S. AEROSPACE ENGINEERING, VIRGINIA TECH

*Fall 2020 - Spring 2021*

#### **Owais Iqbal,**

M.S. COMPUTER SCIENCE → SOFTWARE ENGINEER, FACEBOOK

*Fall 2017 - Spring 2019*

#### **Maddie Ingling**

B.A. PSYCHOLOGY, B.A. CREATIVE WRITING → CREATIVE WRITER WITH PSYCHOLOGY BACKGROUND

*Spring 2018 - Fall 2018*

**Anthony Mosolf**

B.S. COMPUTER SCIENCE → DATA ENGINEER, 4MATIV TECHNOLOGIES

*Spring 2018 - Fall 2018*

**GEORGIA INSTITUTE OF TECHNOLOGY****Cheng-Hann Gan**

B.S. COMPUTER SCIENCE → LEAD SOFTWARE DEVELOPER, UKG

*Fall 2015 - Fall 2016*

**Carl Saldanha**

M.S. COMPUTER SCIENCE → ROBOT ENGINEERING MANAGER, FETCH ROBOTICS

*Fall 2015 - Fall 2016*

**Evangelia Spiliopoulou**

B.S. COMPUTER SCIENCE → APPLIED SCIENTIST, AWS AI, AMAZON

*Summer 2015 - Fall 2015*