

Arjun Madhusudan

COMPUTER SCIENCE – USER EXPERIENCE, GRAPHICS AND GAME DEVELOPMENT

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EDUCATION

Master of Science in Computer Science – North Carolina State University

Aug 2018 – Aug 2020

- Computer graphics and video game concepts: NPC behaviour, AI used for gaming.
- User Experience based concepts such as surveys, attention, and emotions.

Raleigh, NC, USA

Bachelor of Engineering in Computer Science – Acharya Institute of Technology

Aug 2014 – May 2018

- Wide variety of subjects ranging from OS and OOP concepts to computer graphics.

Bangalore, KA, India

SKILLS

- **Languages** - C++, C, Java, C# (MonoDevelop), JavaScript, HTML, CSS, Ruby, Rails, PHP, MySQL.
- **Media Tools** - Unity3D, G3D, Processing PDE, Adobe Photoshop, After Effects, Illustrator, Premiere Pro.
- **Concepts** - AI for Games, Video Game Logic, User Experience, Computer Graphics, NPC Behaviour.

ON-GOING RESEARCH

Esports user performance analysis - Master's thesis project

Aug 2019 – Present

Visual Experience Lab, NC State University

Raleigh, NC, USA

- Researching about what graphical changes affect the performance of professional players in the esports community.
- Conducting user performance studies under the guidance of distinguished mentors from NVIDIA.
- Dealing with special-purpose tools meant for detailed analysis of competitive video-game elements such as aiming, clicking, flicking, tracking and sense of judgement.
- Comparing the effects of having different visual and temporal factors such as shadows, textures and frame rate and how it can impact gameplay.

PROJECTS

2D Game Engine

Aug 2019 – Dec 2019

NC State University

Raleigh, NC, USA

- Constructed a game engine from scratch using C++ and SFML.
- Supported creation of 2D platformers, online multiplayer and networking, multithreaded architecture, recording and replaying gameplay, and custom events and user controls.

AI for behaviour in games

Jan 2019 – May 2019

Team of 3, NC State University

Raleigh, NC, USA

- Built a game using Unity3D with 3 types of intelligent agent behaviours for NPCs, and analysed patterns of behaviour between each other.
- Implemented intelligent behaviours and decision making, along with game physics and player interactions.
- Portrayed skills in game design, animation, scripting and logical trees such as behaviour and decision trees.

User Experience / Simulation through games

Jan 2019 – May 2019

Team of 6, NC State University

Raleigh, NC, USA

- Developed an interactive graphical demonstration to portray usability problems in heavy construction equipment.
- Provided user-oriented solutions to issues an operator would face when operating machinery at a construction site.
- Showcased how video games are helpful for things other than entertainment alone.

WORK EXPERIENCE

Scryptonite

Nov 2016 – Dec 2018

Cofounder and Digital Media Designer

Bangalore, KA, India

- Provided custom website designs based on customer requirements and offered maintenance and support.
- Trained 8 interns for digital media creation. Led and managed media teams on several projects.
- Developed Android Applications for customers from entertainment industries, health care sector and other start-ups.