Michael Gharbharan

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SKILLS SUMMARY

- Diverse experience working in various environments using many programming languages including C++, GLSL, Cg, CUDA, C#, JavaScript, CSS3, HTML and Python
- Deep understanding of all stages in the graphics pipeline
- Able to debug graphical bugs using frame debuggers such as Nsight and gDEBugger
- Proven ability to pickup and work with large unfamiliar codebases
- Proficient with several game engines including Unity, PhyreEngine and Unreal Engine 4
- Developed a modern OpenGL renderer which features deferred lighting, bloom, shadow mapping and more
- Excellent oral and written communication skills developed through academic projects, work within multiple team settings and teaching experience

EDUCATION

Masters in Computer Science (MSc)

University of Ontario Institute of Technology (UOIT), Oshawa, Ontario

- Expected graduation in April 2017
- Research area: developing tools to enhance the process for prototyping and creating assets during development

Bachelor of Information Technology, Game Development and Entrepreneurship

University of Ontario Institute of Technology (UOIT), Oshawa, Ontario

- Class of 2015
- Related courses: Advanced Computer Graphics, Game Engine Design & Implementation, Computer Architecture, Distributed Systems & Networking, Project Management

EXPERIENCE

Teaching Assistant, UOIT **September 2015 – Present**

Planned and conducted tutorials which implement algorithms and techniques in C++, OpenGL and GLSL for the following undergraduate courses:

- Computer Animation Algorithms and Techniques (Fall 2015, Fall 2016)
- Intermediate Computer Graphics (Winter 2016)

Research Assistant, UOIT **April 2015 – September 2015**

Developed a Kinect program in Unity to estimate forces on lower back while lifting objects

- Skeletal tracking with Kinect has troubles when the user is partially occluded, this project looked at ways to overcome this problem using additional image processing
- Languages used: C++, C#

AR Programmer & Project Coordinator, UOIT **September 2014 – April 2015**

Developed Augmented Reality (AR) tools for filmmakers to tangibly prototype sequences

- Coordinated development team of 5 individuals with varying skillsets
- Developed an editor plugin for Unreal Engine 4 which allowed users to place objects and record motion paths using physical props in the real world using the Metaio AR library
- Languages used: C++, Unreal Blueprints

Research Assistant, UOIT **April 2014 – September 2014**

Developed Augmented Reality (AR) tools for game designers to tangibly place items in world

- Created an engine agnostic plugin which uses AR Tool Kit to process video frames which detects AR markers, detected markers are then used as input to interact with Unity
- Developed a plugin interface for the Unity3D game engine, allowing users to interact with the Unity Editor using AR
- Languages used: C++, C#

Producer, Graphics & PS3 Programmer, UOIT **September 2013 – April 2014**

UOIT Game Development Yearlong project – "Roboy in da Hood"

- Coordinated team of 6 using Sony's PhyreEngine to create a GTA Style game for the PlayStation 3
- Experience using PS3 debugging tools and the pipeline to deploy to the PS3
- Created a domain specific language to handle scene importing and exporting from Maya
- Figured out the architecture of PhyreEngine and created scripts that cohere with the engine design
- Languages used: C++, Cg, Python, Lua

Research Assistant, UOIT **April 2013 – September 2013**

Developed vehicular traffic AI simulator which works with procedurally generated cities

- Used CityEngine to procedurally generate City and wrote a Python script to export nodes
- Created a component in Unity which causes entity to exhibit intelligent traffic driving behaviour using A* pathfinding
- Utilized Agile project management techniques to maximize productivity
- Communicated and collaborated with professor to define project specification
- Languages used: C#, Python, JavaScript

Producer, Graphics & Audio Programmer, UOIT **September 2012 – April 2013**

UOIT Game Development Yearlong project – "A Case of the Mondays"

- Wrote an OpenGL 4.0 deferred rendering engine and linear algebra math library in C++
- Implemented bloom, color correction, shadow mapping
- Coordinated team of 5 in creating an isometric twin stick shooter for Windows 7
- Integrated FMOD library to achieve 3D sound in game
- Won UOIT Game Development's Player Choice Award
- Languages used: C++, GLSL