Omar A. Zohdi

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PROFESSIONAL SUMMARY

I am a recent graduate from DePaul University, where I completed my MSc in Computer science. I not only see coding as a job but as a passion, I have helped undergraduates learn coding during my time at DePaul as a tutor and I have taken part in multiple programming extra-curricular projects. I focused my academics on learning how to implement large frameworks and optimize the code for ideal performance and faster results. I've had extensive experience in C++/C and C# and had hands on experience Java and Python. I also possess professional experience in both backend and frontend web development.

EDUCATION

DEPAUL UNIVERSITY
Chicago, IL
Master of Science in Computer Science – Computer Game Development   January 2013 – March 2015
- Senior Project: Built a generalized Oculus Rift SDK wrapper for DePaul's Internal Engine, Azul using C++.
- Contributed to the "For the Records" Transmedia Project by developing a JavaScript game.
- Relevant class work includes: Managing Globally Distributed Systems, Game Performance Optimization, Parallel Algorithms, Cognitive Science, and Programming Design Patterns.

UNIVERSITY OF MODERN SCIENCE AND ARTS
Cairo, Egypt
Bachelor of Science in Computer Science   September 2006 – June 2010
- Senior Project: Built a basic 3D Physics framework for Xna using C# – including rigid body dynamics and collision detection.
- Relevant class work includes: Software Design Methodology, Computer Networks, Computer Graphics, Multimedia Programming in Java, and Human-Computer Interaction.

PROFESSIONAL EXPERIENCE

DEPAUL UNIVERSITY
Chicago, Illinois
Research Assistant – Lead Software Engineer   August 2015 – Present

- Expanded the TraceLab Open source project adding requested features, configuring development environments and fixing known issues from previous development cycles.
- Wrote the project's documentation and managed other software engineers to maintain the same standards throughout the development cycle.
- Assisted PhD students with technical support for the TraceLab software in their research.

DEPAUL UNIVERSITY
Chicago, Illinois
Graduate Assistant   September 2013 – March 2015

- Taught undergraduate and graduate students how to implement data structures and algorithms.
- Instructed undergraduate students on linear algebra for 3D graphics and gameplay programming courses.
- Assisted gameplay students in learning development best practices in Unity3D and school's internal game engine, Azul.

NAUBA (NEW ENERGY S.R.L.)
Milan, Italy
Web Developer   May 2011- August 2012

- Developed multiple e-commerce websites based on client's needs using the Magento framework.
- Worked both as a backend and frontend developer; making use of both client and server side languages including HTML, JavaScript and PHP.
- Contributed to usability design of websites' functionality.

NEW ENERGY S.R.L.
Milan, Italy
IT Consultant   March 2011 – May 2011

- Implemented CRM systems using Oracle Siebel based on clients' needs and iteratively modified and/or added functionality per clients' requests.
- Learned and used Oracle Siebel's eScript language to build custom functionality for large pre-existing CRM systems.
- Conducted extensive testing and quality assurance of both backend developers' tools and frontend applets functionality for the clients.

TECHNICAL OVERVIEW AND SKILLS

DEVELOPMENT TOOLS: Visual studio 2010-2013, Eclipse, NetBeans, and Siebel CRM.
PROGRAMMING LANGUAGES: C++/C, C#, ASP .NET, Java, HTML, CSS, JavaScript, Python, MySQL and PHP.
APIS & LIBRARIES: KineticJS, JQuery, Magento, OpenGL, LibOVR and OpenCL.
VERSION CONTROL: Git, SVN, and Perforce.
SPOKEN LANGUAGES: Italian, English, and Arabic (Egyptian).

RELEVENT PROJECTS AND CLASSWORK

SOTERIA: DREAMS AS CURRENCY (IN PROGRESS)
C# - Untiy3D

- Oversaw the development of the project as lead programmer at DePaul's serious game lab (Play for Change).
- Defined main code architecture and coordinated with artists for standardized asset pipeline.
- Worked on multiple basic systems for the correct structuring of the code and use by gameplay programmers.
- Built an audio manager and text parser both used to create a dialogue system. The system also supports a basic form of triggers to initiate desired events in game.
- Optimized code base for faster and more stable runtime across different platforms.

FOR THE RECORDS – PERFECTION   Silver Medal at International Serious Play Awards 2014
JavaScript

- Determined and constructed game architecture and code design making use of the JavaScript library KineticJS.
- Optimized code for faster and more stable execution across major browsers (Chrome, IE9 and Firefox).
- Iterated through gameplay mechanics with designers input to stay true to the game's message.

CODE OPTIMIZATION
C++

- Developed a variable and fixed size block allocator & heap-based memory system.
- Optimized a prebuilt large particle system from 1200ms to 10ms per update.
- Updated a prebuilt math library to use SIMD for faster math computation.
- Built a load-in-place memory system as a method of avoiding allocation overhead at runtime.

OO DESIGN PATTERNS AND PROGRAMMING
C#

- Built the game space invaders from the ground up and designed it using more than 10 modern object oriented design patterns.
- Made the game scalable by building different systems including a collision system, resource manager and event queue.
- Built documentation for the project including diagrams and other informational data to improve project maintainability
- Discussed and defended the various approaches and design taken in the project with other students over the course of the project's duration.

NETWORK DEVELOPMENT
C# & C++

- Recreated the arcade game Omega race using Xna to implement a 2 player networked game.
- Created a network waiting lobby and screen management system to allow for users to join a session, wait for another user to join, leave a waiting room, or leave the session.
- Implemented a serialization/deserialization system to allow data structures of various sizes to be transmitted over a network.

OCULUS RIFT (DK1) WRAPPER
C++

- Integrated the Oculus rift SDK (DK1) with the school's internal engine, Azul, using an Adaptor pattern to minimize changes on the engine side.
- Designed the architecture of the VR Adaptor to simplify the process of prototyping quick VR solutions on most Azul projects.
- Integrated Stereoscopic Rendering and Motion Tracking using OpenGL off screen rendering and OVR head motion tracking library respectively.