

# Omar A. Zohdi

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## PROFESSIONAL SUMMARY

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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 have had extensive experience mainly in C++/C and C# but also had hands on experience with Java, python and web development languages.

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## EDUCATION

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### DEPAUL UNIVERSITY

*Master of Science in Computer Science – Computer Game Development*

Chicago, IL

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

*Bachelor of Science in Computer Science*

Cairo, Egypt

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.

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## PROFESSIONAL EXPERIENCE

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### DEPAUL UNIVERSITY

*Graduate Assistant*

Chicago, Illinois

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.)

*Web Developer*

Milan, Italy

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.

*IT Consultant*

Milan, Italy

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 made use of 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.

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## TECHNICAL OVERVIEW AND SKILLS

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**DEVELOPMENT TOOLS:** Visual studio 2010-2013, Eclipse, NetBeans, and Siebel CRM.

**PROGRAMMING LANGUAGES:** C++/C, C#, Java, HTML, CSS, JavaScript, Python, MySQL and PHP.

**APIS & LIBRARIES:** OpenGL, LibOVR and OpenCL.

**VERSION CONTROL:** GitHub, Subversion, and Perforce.

**SPOKEN LANGUAGES:** Italian, English, and Arabic (Egyptian).

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## RELEVANT PROJECTS AND CLASSWORK

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### SOTERIA: DREAMS AS CURRENCY (IN PROGRESS)

C# - Unity3D

- 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.
- Built multiple systems for the correct structuring of the code.
- 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.
- Optimized code for faster and more stable execution across all browsers.
- Iterated through gameplay mechanics with designers input to stay true to the game's message.

### CODE OPTIMIZATION

C++

- Wrote and integrated a variable-size and fixed-size block allocator and heap-based memory system in C++, including overloading new and delete to provide debug information in select build settings.
- Implemented a load-in-place memory system to remove memory allocation overhead at runtime.
- Optimized a large particle system to increase its speed from more than 1200 ms per update to less than 10 ms.
- Improved cache miss rates in data structures using proper data alignment and padding in classes and structures.

### OO DESIGN PATTERNS AND PROGRAMMING

C#

- Made use of more than 10 design patterns in the final project, rendering the code scalable and maintainable.
- Wrote extensive documentation for the code base using C#'s built in documentation features.
- Presented and justified my designs against other students and teacher during the final weeks.

### NETWORKING

C# & C++

- 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.
- Developed a prediction simulation for debugging purposes to allow for smooth predictive motion (for a mini game the users can take part in) when under constrained bandwidth and latency
- Implemented a serialization/deserialization system to allow data structures of various sizes to be transmitted over a network.