

ZACHARY EDWARD GARBARINO

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OBJECTIVE:

Interested in gaining additional experience in a broader range of applications in either traditional app development, Web Development with Javascript, or mobile app development. Zachary is currently looking for Entry Level programming positions.

CERTIFICATIONS: Oracle Certified Associate, Java SE 7 Programmer

AWS Certified Cloud Practitioner (Validation Number: NZS4M5ZLJ1QEQVCP)

EDUCATION: University of Maryland, Baltimore County (UMBC)

BS in Computer Science

3.459 GPA

SKILLS:

Languages: JavaScript, Java, C++, Swift, Objective C, Python

Operating Systems: Mac OS, Windows 10, Linux, iOS

ACE Hardware (2021 - Present)

Currently working as a Maintenance Associate.

Vianki LLC (2016 - Present)

Developed Void Galaxia, an Apple TV (TVOS) game using the Swift programming language. It is a retro-style shoot-em-up game. (Read more: <https://zacharygarbarino.com/void-galaxia>)

- Used SpriteKit as a foundation for on-screen object behaviors and interactions
- Integrated in the API for Apple TV Siri Remote to use motion sensor to steer ship, the trackpad to

- aim weapons, and buttons/touchpad gestures to interact with menu screens
- Used Xcode's Instruments to find and fix performance issues
- Developed my own images, sounds, and music using Aseprite, Garage Band, and BFXR
- <https://bitbucket.org/zegarba/void-galaxia/src/master/>

Sole developer of a product that offers owners of vacation properties with Tesla chargers a way to market directly as destinations to Tesla car owners. Components of this product include:

- IOS app to map vacation properties locations (Google Map API integration)
- AWS DynamoDB tables to store vacation property data
- Used AWS Lambda function to communicate between App and database
- Interface to Stripe payment processing system for receiving payments from property owners

Developed Web and iOS applications using JavaScript, iOS Swift, HTML, and Web development tools.

- Developed JavaScript to link Web forms to cloud-based database.

UMBC Research Assistantship, Summer 2014

Researching techniques using Fourier Transformations on two graphic images in order to make one viewable from a distance and another viewable from closer in order to visualize data related to biochemical reactions.

- Used a low frequency filter on graph with chemical groups to be viewed at a distance, resulting in a blurred image when viewed closer.
- Used a high frequency filter on graph with details on each individual chemical to be viewed close up
- Implemented in JavaScript to run on a website.
- Optimizing Algorithms to run in a real time environment.

Summer 2013 - Raytheon Internship: Research on improving security on DNS servers.

- Investigated using Apache 2-way SSL for authentication.
- Investigated a failsafe for updates propagating from read/write master DNS servers to read-only servant servers, in order to prevent an identification server from failing to receive an update, and becoming a potential hole in security.

Summer 2012 - iOS APP DEVELOPMENT: To learn the iOS development environment, developed a Gradius or Space Invaders style video game iPhone app using the Cocos2d toolkit. Completed the basic game play, with the general mechanics working. Implemented the following functionality:

- Used Cocos2d scenes and layers to create the game screen
- Used iOS touch screen API to create touchpad buttons to control object onscreen
- Set up storage arrays for waves of enemies and player and enemy bullets
- Created logic to handle collision detection between bullets and other objects
- Handled memory cleanup space used by destroyed enemies
- Created shooting functions that given direction and speed, use Trigonometry to plot paths for bullets used by enemies to shoot directly at player
- Increase code reuse by creating a generic super class for specific enemy& bullet types

CLASS PROJECTS:

- Wrote programs to cause buffer overflow attack to modify existing programs and perform text searches.
- Wrote TicTacToe game A.I. that learned by storing results for each move in a hash table.
- Wrote a Huffman encoding program to compress text files using a binary tree optimized to place most frequent letters near the top.
- Added weighting to a binary search tree in order to find where in an in-order traversal an element was.
- Used Python language for several projects including a program to validate XML tags and a program to display up to 4 degrees of a KOCH triangle.
- Used Java to learn Object Oriented design and programming, including encapsulation, inheritance, and polymorphism. Used Java for several projects including card game and document storage system.
- Created basic graphics and manipulated camera angles in Open GL.
- Wrote an AI for a robot arena simulation game.

OTHER PROJECTS:

- Javascript practice projects: <https://bitbucket.org/zegarba/zegarba.bitbucket.io/src/master/>

ACHIEVEMENTS:

- Achieved 2nd Degree Black Belt in Taijutsu, Martial Arts
- 12 years piano study including Student of the Year Award
- Received 29 college credits from AP testing including a 5 in AP Calculus and a 4 in AP Physics

VOLUNTEER WORK:

- Bayside Community Church - BayPro (A/V) Broadcast Team: Responsible for coordinating remote teams to broadcast live sermons simultaneously to multiple locations.

HONORS & AWARDS:

- UMBC Heritage Scholarship (\$10,000/year)
- AP Scholar with Distinction Award