ZAID ISMAIL
SOFTWARE ENGINEER

Durban, South Africa | P: +27828965760 | zaidismail031@gmail.com

LinkedIn: https://linkedin.com/in/zaid-ismail-0957a61b1
GitHub: https://github.com/zaid-ismail031
Personal Website: https://zaidismail.co.za

ABOUT ME

Organized, detail-oriented Engineering graduate with experience in videogame programming and web development. Passionate about all aspects of software development. Strong written and verbal communication skills. A quick learner and a great problem solver.

Skills: Python, C, C++, Java, JavaScript, C#, ASP.NET, Unity (Game Engine), Assembly, WinAPI, SQL, PostgreSQL, MongoDB, Django, Node.js, Flask, React, Git, Jira, Elixir, Phoenix, PlasticSCM, Agile, Scrum

WORK EXPERIENCE

ThoroughTec Simulation
Intermediate Software Developer   *Jan 2023 – Present*
- Developed detailed and realistic training simulators for surface and underground drill-rigs using the Unity game engine and C#, in the vein of other popular training simulators like Microsoft Flight Simulator.
- Developed simulators for big mining clients such as De Beers.
- Handled both gameplay and UI programming, working on vehicle mechanics such as tramming, drilling and bolting, as well as the various GUIs associated with each vehicle.
- Cultivated a skill set in object-oriented and event-driven programming.

Multiple Projects
Open-Source Contributor on GitHub   *Aug 2022 – Present*
- Occasional contributor to open-source projects on GitHub.
- Refactored code in the Xenia Xbox 360 emulator project, written in C++.
- Fixed an alphabetical sorting bug in ShadPS4, a PS4 emulator written in C++.
- Refactored code in a source port of the action role-playing videogame Diablo, written in C++.
- Replaced icons on the frontend of Oppia, Google's open-source education platform.

Tau Space

Operations Engineer   *Sep 2022 – Dec 2022*

- Wrote applications in Perl and Elixir to directly interface with 5G network infrastructure.
- Developed test cases for network applications.
- Handled daily monitoring of servers, databases and business operations.
- Worked with PostgreSQL databases to generate on-the-fly insights about business and systems operations.
- Automated several monitoring processes (such as querying databases, checking log files and generating CSV files) using Python.
- Liaised with clients in the South African telecoms industry to support day-to-day business and systems operations.
- Cultivated a skill set in functional programming through experience with Elixir.

Syntax Co.

Back End Developer   *Feb 2021 – Apr 2021*

- Developed a car rental web application using Node.js with Express.js and MongoDB.
- Ensured project completion within 2 months as per the client's request.

HackerOne

Freelance Cyber Security Research   *Jul 2020 – Oct 2020*

- Studied the basics of cyber security and penetration testing, completed several cyber security labs, and did cyber security research on multiple programs on HackerOne.
- Discovered a valid security vulnerability on a Sony-owned web application and submitted it to Sony's Vulnerability Disclosure Program on HackerOne.

PROJECTS

OpenGL 3D Graphics Engine (C++)

- Developed a simple 3D graphics engine written in C++, using the Windows API and OpenGL.
- Implemented camera movement, textures and shaders, with lighting and normal mapping.
- A demo can be viewed here: https://youtu.be/mH6OJFoW42E.

Stock Trading Web App (Django)

- Developed a stock trading web application using Django, a Python-based full-stack framework.

- Users can demo-trade with real-life stocks.
- Users can view charts showing up-to-date share prices of popular stocks.
- There is an RSS feed showing relevant news, to aid users in their trading strategies.
- A demo can be viewed here: https://youtu.be/bilbHaLgHj4.

Car Rental Web App (NodeJS)
- Developed a back-end and API for a car rental app using MongoDB, Express, NodeJS, and vanilla JavaScript.
- MongoDB is used alongside Mongoose for database design and management.
- A demo can be viewed here: https://youtu.be/gOxp-XhPD_g.

NES Game (6502 Assembly)
- Developed a simple game for the NES using the Assembly language for the MOS 6502 CPU, which the NES's Ricoh 2A03 CPU is based on.
- Displays a Mario sprite on screen, which can be moved with a running animation.
- A demo can be viewed here: https://youtu.be/IOlqHrtu8eg.

FORMAL EDUCATION

University of KwaZulu-Natal – Durban, South Africa　*Jan 2017 – Dec 2021*
Bachelor of Science in Engineering (with Honours), Civil Engineering
- Completed eight Mathematics courses involving calculus, linear algebra, mathematical systems and statistics.
- Completed a dissertation on the flood attenuation function of artificial wetlands, which required data analysis and mathematical modelling.
- Planned the construction of a structural steel warehouse for the course's final design project.

CERTIFICATES

Udemy　*Oct 2022*
Elixir and Phoenix: Real World Functional Programming
- Acquired an understanding of the programming language Elixir, and an Elixir-based web framework, Phoenix.
- Cultivated a skill set in functional programming through use of Elixir.

Udemy　*Oct 2022*
SQL and PostgreSQL: The Complete Developer's Guide

- Learned how to write SQL queries for relational databases through lecture videos and practical labs.
- Learned how to design efficient database structures to maximize the usefulness of collected data.

Stanford Online   *Jun 2022*
Machine Learning
- Learned and applied several machine learning concepts including supervised learning, unsupervised learning, linear regression, logistic regression, gradient descent, neural networks and the SVM (support vector machine) algorithm.
- Implemented machine learning algorithms using Octave, a high-level programming language that is specialized for numerical computation and linear algebra.

Amazon Web Services   *Jan 2022*
AWS-DEV-13: Building Modern .NET Applications on AWS
- Familiarized myself with .NET and ASP.NET.
- Gained familiarity with "serverless" web development.
- Deployed ASP.NET web applications with services like Amazon S3 and Amazon EC2.
- Learned how to implement API authentication on Amazon API Gateway using Amazon Cognito.

Harvard Online   *Mar 2021*
CS50's Web Programming with Python and JavaScript
- Gained proficiency in creating web applications using Django.
- Created interactive web pages using JavaScript.
- Learned how to use HTML5 and CSS.
- Built a stock trading web application, utilizing a REST API, that allows users to demo-trade stocks.
- Learned how to work with SQL databases.

Harvard Online   *Jul 2020*
CS50's Introduction to Computer Science
- Learned how to program using C and Python by completing practical assignments.
- Learned the fundamentals of computer science.
- Leveraged low-level C programming techniques, including pointer manipulation and dynamic memory management.
- Developed a blog web application using the Flask web development framework.

ADDITIONAL

Interests: Videogames, technology, soccer, film, science fiction, history, geopolitics, economics
Languages: English