

ZAID ISMAIL

SOFTWARE ENGINEER AND CIVIL ENGINEERING GRADUATE

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ABOUT ME

Organized, detail-oriented “STEM” graduate with experience in web development, IT management and Civil Engineering. Strong written and verbal communication skills. A quick learner and a great problem solver.

Skills: Python, C, C++, Java, PHP, JavaScript, HTML/CSS, Django, Flask, Node.js (MERN stack), Octave/MATLAB, Microsoft Excel

PROJECTS

Twitter Clone (Django)

- Developed a simple clone of Twitter using Django, a Python-based full-stack framework.
- Users can create posts, “like” posts, edit posts and follow other users.
- Deployed the web application on an AWS EC2 instance.
- Gunicorn is used to serve the Django application, while Nginx acts as a reverse proxy. Nginx accepts incoming connections and redirects these requests to Gunicorn, except for static files, which Nginx handles itself.
- The web application can be viewed and interacted with here: <http://54.212.21.178/>

Stock Trading (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 (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

Image Classifier Neural Network (Python)

- A trained neural network that can classify images between plane, car, bird, cat, deer, dog, frog, ship or truck.
- The model was trained using an 8-layer neural network with 10 epochs.
- The model has an accuracy of 64%.

Sudoku Solver (Python)

- A script that solves Sudoku boards using a recursive, backtracking algorithm.

Subdomain Enumeration (Python)

- A script that outputs a list of all active subdomains for a given domain.
- Useful for penetration testing.
- Utilizes MassDNS, Amass and a commonspeak2 subdomain wordlist.

Broforce NES Clone (MOS 6502 Assembly, in development)

- Developing a proof-of-concept clone of popular modern retro game Broforce.
- The most recent development in this project is getting the NES to display a static image of Mario.

- The purpose is to improve my ability at low-level programming.

WORK EXPERIENCE

Multiple Projects

Open-Source Contributor

Aug 2022 – Present

- Refactored code in the Xenia Xbox 360 emulator project, written in C++.
- Contributed to the documentation of Scrapy, a Python web-scraping framework.
- Refactored code in DevilutionX, a source port of the action role-playing videogame Diablo and its expansion Diablo: Hellfire.
- Replaced icons on the frontend of Oppia, Google's open-source education/learning project.

Power Builder's Supplies – Durban, South Africa

IT Manager

Jan 2022 – Present

- Digitized business operations, by creating a website and a custom mailbox.
- Set up the business LAN, computers, printers, and security cameras.
- Set up a data pipeline using Apache Kafka, including data visualization tools to better inform business decisions.
- Provided SEO services to increase discoverability on search engines.
- Managed the online side of the business, on platforms like Takealot, Instagram and Facebook Marketplace.

DE Consultants – Durban, South Africa

Civil Engineering Intern

Jun 2021 – Aug 2021

- Designed a floor slab for a client.
- Prepared engineering drawings using AutoCAD.
- Oversaw the construction of columns for a double storey concrete building.
- Automated several processes, including archival of completed projects, using Python.

Syntax Co. – Durban, South Africa

Backend Developer

Feb 2021 – Apr 2021

- Spearheaded the company's most expensive project (a car rental web application), resulting in a 200% month-on-month increase in revenue.
- Coded a back-end and API for the car rental app using NodeJS.
- Ensured completion within two months (as per the client's request).

HackerOne

Freelance Cyber Security Researcher

Jul 2020 – Aug 2020

- Discovered a valid security vulnerability on a Sony-owned web application and submitted it to Sony's Vulnerability Disclosure Program.
- Received a "Secure@Sony 2020" T-Shirt as a reward.

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.
- Graduated with a 65% average.

CERTIFICATES

Stanford University – 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 – Online

Jan 2022

AWS-DEV-13: Building Modern .NET Applications on AWS

- Familiarized myself with ASP.NET.
- Gained familiarity with “serverless” web development.
- Deployed .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 University – 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.

Harvard University – 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.
- Utilized low-level C functions such as pointers and dynamic memory allocation (using “malloc()” and “free()”).
- Developed a blog web application using the Flask web development framework.

Dale Carnegie – Durban, South Africa

Jun 2015

Generation Next Course

- Learned effective methods of teamwork and communication.
- Improved my public speaking skills and had to give presentations in front of sizeable crowds.

ADDITIONAL

Interests: Videogames, technology, soccer, science fiction, history, geopolitics, economics, humanitarianism

Languages: English, Afrikaans

REFERENCES

Available on request.