Isaac Obinna Arum GPA:3.7

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Education

East Carolina University **2024 - 2025**
Master in Software Engineering *Current*

East Carolina University **2021 - 2024**
B.S in Software Engineering *Data Science*

Work Experience

Amazon Warehouse (Inventory Associate Worker) **January 2019 – January 2020**

- Collaborated with different departments to optimize inventory management, ensuring efficient stock control and accurate inventory tracking.
- Resolved discrepancies in inventory data, maintaining data integrity and supporting smooth warehouse operations.
- Contributed to a culture of continuous improvement and professional growth within the team.
- Assisted in aligning inventory practices with broader business objectives, supporting overall warehouse efficiency.
- Supported process enhancements and implemented best practices in workflow management, contributing to operational improvements.
- Handled packaging of items with care, ensuring products were secure and ready for shipment.
- Managed shipping tasks, ensuring timely and accurate delivery of orders, and maintaining trust with customers.

Verizon(Call support Agent) **August 2022 – Dec 2022**

- Managed 1500+ weekly inbound calls, providing timely and effective support for customer inquiries and issues.
- Resolved customer issues with high satisfaction, utilizing problem-solving skills and product knowledge.
- Coordinated appointments for major accounts, ensuring efficient and effective service delivery.
- Proficient in Excel and data management, used for tracking customer interactions and generating reports.
- Maintained strict data protection standards, ensuring the confidentiality and security of sensitive information.

Projects

East Carolina University NCEMPT Project Manager **August 2023 - May 2024**

- The primary goal of the NCEMPT system is to assess students' proficiency in math and science by analyzing their answers to each question. It provides targeted study recommendations to help students improve in specific areas, ensuring they are prepared for college-level courses and can pursue their intended majors with a clear understanding of their readiness. This test was conducted through a proctored session where the test administration could monitor student progress in real-time.
- My responsibilities included leading the development and scaling of the software, ensuring system reliability and performance through critical debugging, optimizing the codebase for maintainability, and delivering technical presentations to stakeholders to align technical outcomes with business objectives.

Interactive Portfolio Website with Advanced User Engagement **2024 CURRENT**

- Designed and developed a fully responsive **portfolio website** to showcase my skills, projects, and professional background, enabling users to interact with my work and learn more about me.
- Implemented features allowing users to **report bugs**, provide **feedback**, and **suggest solutions** for improvements directly through the website.
- Integrated a **comment section** where users can **view, interact, and reply** to other users' **bug reports, comments, and proposed solutions**, fostering collaboration and real-time problem-solving.
- Added a **resume download** feature with tracking capabilities, allowing seamless access to my resume while monitoring user downloads for insights.
- Leveraged **GET APIs** to keep users informed about my most recent projects, including **real-time updates on GitHub commits**, issues, and project discussions.
- Enabled users to **view live updates** of my projects, such as the latest commits, comments, and contributions on my public GitHub repositories.
- Developed a dynamic dashboard to showcase **project milestones, real-time progress, and activity insights**, enhancing transparency and user engagement.
- Implemented notifications and analytics to inform users about **updates, new features, and resolved issues** within the portfolio.
- Tools: **Django**, **Bootstrap**, **JavaScript**, **Python**, **REST APIs**, **GitHub API**, and **PostgreSQL**.

Analysis of Voter Distribution in Pitt County **May 2024**

- Analyzed spatial distributions of Democrat, Republican, and Unaffiliated voters across elementary, middle, and high school attendance districts in Pitt County using Python.
- Processed and converted geospatial data to ensure consistency in coordinate reference systems.
- Conducted spatial overlay analysis to map voter distributions within school districts.
- Visualized results through detailed plots, highlighting voter distribution patterns by school district type.
- Summarized findings to discuss the potential influence of school districts on voter geographical distribution.
- Utilized tools and technologies such as Python, Geopandas, Matplotlib, GIS (shapefiles and GeoPackage), and coordinate reference system (CRS) conversion.

ML-Based Analysis of Political Party Influence on State GDP Trends

- Conducted an in-depth analysis of **state GDP trends** under different U.S. presidential administrations (1976–2022) using **machine learning models** and historical data.
- Built predictive models for GDP trends leveraging tools like **ARIMA** and **Random Forest**, estimating the economic impact of political party changes.
- Utilized **KMeans clustering** to identify regional economic patterns and similarities across states.
- Performed **exploratory data analysis (EDA)** and feature engineering to uncover correlations between political leadership and state-level economic growth.
- Developed visualizations such as heatmaps and segmented line plots using **Matplotlib** and **Seaborn** to present insights effectively.
- Tools: **Python**, **Pandas**, **NumPy**, **Scikit-learn**, **Statsmodels**, **Seaborn**, and **Imbalanced-learn**.

YouTube Platform Integration Testing Framework

- Designed and implemented an integration testing framework for YouTube's platform using **Selenium** and **Python**, ensuring seamless interaction between frontend and backend components.
- Developed and executed comprehensive automated test cases to validate APIs, user interactions, and backend processes.
- Identified and resolved system defects by analyzing test results, debugging, and collaborating with team members, improving software reliability and user experience.
- Streamlined testing workflows by automating repetitive test scenarios with **pytest**, reducing testing time and increasing efficiency.
- Documented testing processes and results, providing actionable insights to enhance system performance and stability.
- Created an interactive and user-friendly reporting system to log errors, save user interaction data, and offer improvement suggestions.

Advanced Smart Inventory Stock Management System

- Designed and developed a robust inventory management system tailored for small to mid-sized businesses, demonstrating the application of **software engineering principles**.
- Followed an iterative approach to the project, encompassing **requirement gathering, system design, and testing** to ensure comprehensive coverage of real-world methodologies.
- Conducted **requirements engineering**, identifying stakeholders, defining 6 functional and 4 non-functional requirements, and developing detailed documentation for clarity and alignment.
- Modeled system behavior using **use case diagrams, sequence diagrams, and state diagrams**, ensuring precise visualization of system processes.
- Designed a **Model-View-Controller (MVC)** architecture and evaluated other software architectures such as layered, pipe-and-filter, and client-server to select the most appropriate design.
- Implemented **use case testing, requirements-based testing, and usage scenario testing** to validate system functionality and identify potential areas of improvement.
- Utilized tools such as **Python**, **Django**, **Lucidchart**, and **Selenium** to execute and document the project effectively.
- Delivered final prototypes, including updated **use case diagrams, sequence diagrams, and activity diagrams**, along with an **implementation plan** detailing milestones, tools, and risk management strategies.

Currently Pursuing

- **Coursera**: IBM Cybersecurity Analyst Professional Certificate
- **Google**: Cybersecurity Professional Certificate
- **ECU**: Master in Software Engineering

Technical Skills and Familiarities

- **Languages**: Python, Java, C++, Prolog, Haskell
- **Backend**: Django, Flask, SQL
- **Frontend**: HTML, CSS, Bootstrap
- **Version Control & Tools**: Git, Gitlab, Github, Jira
- **Development Practices**: Agile, Linux, Windows
- **Libraries**: pandas, NumPy, PyTorch, TensorFlow

References

- **Anna (Bozovich) Holt**: ED Residency Facilitator, CONE HEALTH.
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- **Aaron Okwei**:Senior Engineer Specialist, MERCK.
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