Orbin Ahmed Acanto

GitHub Portfolio
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EDUCATION

BRAC University — Dhaka, Bangladesh
Bachelor of Science in Computer Science & Engineering — May 2022
CGPA: 3.42 out of 4
Additional Coursework: Cryptography & Cryptoanalysis, VLSI Design
Activities & Societies: Robotics Club of BRAC University, Adventure Club of BRAC University

Stony Brook University — New York, USA
Master of Science in Biomedical Informatics — Aug 2024 – Present
Lab Experience:

- Dr. Chen's Lab: Researched Pathological Image Segmentation & Detection, applying machine learning to improve diagnostic accuracy in medical imaging.
- Dr. Davuluri's Lab: Worked on DNA Sequence Analysis, leveraging transformer models to decode gene regulatory mechanisms and cluster species based on gene embedding data.

PUBLICATIONS

[1] O. A. Acanto, M. I. Drishty, A. Islam, S. Zaman, J. Ahmed and M. K. Rhaman, "A hybrid approach to determine patient's critical situation using deep learning algorithm," 2022 2nd International Conference on Computing and Machine Intelligence (ICMI), 2022, pp. 1-5, doi: 10.1109/ICMI55296.2022.9873684

WORK EXPERIENCE

Ideal Home Furniture
Abu Dhabi, UAE
Data Scientist
April 2024 – Present
Tasks-

- Leveraged machine learning to analyze user data and design preferences, driving model development for automated design elements, recommendation systems, and data-driven decision making.
- Designed and built user-friendly interfaces for deep learning image processing applications using Next.js for the frontend, ensuring an optimal user experience.
- Collaborated with design teams and product teams to translate data insights and machine learning outputs into actionable design recommendations.
- Developed and deployed web applications using Next.js for frontend and Django for backend, supporting data analysis, visualization, and deep learning model utilization.
- Utilized AWS services ex. EC2 to manage and scale the web application infrastructure.

Increments Inc

Dhaka, Bangladesh

Software Engineer I

July 2022 – May 2023

Tasks-

- Analyze user requirement and determines operational feasibility
- Responsible for creating software requirement specification (SRS) for new project
- Followed the UML based methods to create: Use Cases and Activity Diagrams
- Implement machine learning algorithm into software application
- Build reusable component and developed responsive website using react
- Design responsive website on the Django web framework
- Integrate REST API to the frontend of the software
- Wrote well documented code for ERP software
- Deploy website to live server on AWS EC2 instance
- Perform manual testing. execute different test cases and validate the test output

Techynaf

Dhaka, Bangladesh

Software intern

August 2021 – November 2021

Tasks-

- Collaborate with tech lead and complete different assigned task of frontend

- Testing software applications and report bugs
- Modified existing code to correct errors/bugs in the Laravel framework
- Documenting and fixing a wide range of technical issues

TECHNICAL SKILLS

Programming Language: React JS, Python, HTML, CSS, JavaScript, jQuery, TypeScript

Frameworks: Next JS, Django, PyTorch, TensorFlow, Frappe, Bootstrap, Tailwind

Technical Writing tools: Latex, MS Word, Typora

Developer Tools: Git, AWS.

Operating System: Windows, Ubuntu.

Python Libraries: NumPy, OpenCV, Face recognition, EasyOCR, Matplotlib, Pandas, Seaborn, Glob.

Software: PyCharm, VS Code, Cisco Packet Tracer, Sublime Text, Arduino IDE.

Language proficiency: IELTS [overall: 7] (reading: 7.0, writing: 6.0, speaking: 6.5, listening: 7.5)

PROJECTS

https://www.idealhomeuae.com | Next JS, Django, PostgreSQL, Typescript, Tailwind CSS

- Client-facing interface displays various company projects, a gallery, and highlights the company's diverse services.
- Automatically gathers interior design inspiration by scraping images from online sources, enriching the platform's visual content.
- Django backend hosts APIs for a powerful AI model that detects floor plans and converts them into detailed 3D dollhouse views where user can modify interior and furniture's of the room.
- Export the 3D scene render it later by utilizing web GPU to view the space in 4K high quality.
- The system employs Stable Diffusion AI to transform rooms with redesigned 360-degree views, offering an immersive experience for users exploring interior design options.
- A dedicated tool for uPVC window and door customization lets users create tailored designs, visualized in full 3D.

A Real-Time Critical Situation Detection | Python, TensorFlow, Keras, Blazepose, CNN, pandas

- The system detects facial expression and body posture of the patients

- Applied a heuristic approach to identify the critical situation
- The system also detects falling sequence of the patients like sitting, shoulder bending, leaning, falling
- Implement Convolutional Neural Network a deep learning-based architecture to identify facial expressions and BlazePose algorithm to extract the posture of the patients
- The combine model achieves a 67% accuracy on test set, which contains image of different scenario and light condition

Bengali Hand Writing Character Classification | Python, TensorFlow, Keras, CNN, pandas

- This is a classification problem of Bengali handwriting character
- Dataset contains 50 simple and 120 compound character, where more than 60,000 images
- Build a custom 22-layer CNN model for multi-class classification
- Trained the model using Image data generator for improved performance and data augmentation
- Tested the model in test set containing 10,000 images and got accuracy of 89%.

In-depth Analysis of RNA Sequences in the context of mouse species | R, Bioconductor

- Implement using R programming language and Bioconductor
- Analyzed Genome assembly GRCm39 dataset
- Study the system-wide transcriptional changes of mouse gene
- Developed a lightweight and reusable RNA sequence pipeline to retrieves biological annotations, performs transcript quantification, multivariate analysis and performs principal component analysis (PCA), gene expression and module analysis
- Create interactive data visualizations and identifying experimental bias in large datasets.

https://makemymenu.io | React JS, Django, PostgreSQL, JavaScript, Ajax, Bootstrap.

- It is a restaurant menu digitalize software.
- System users can build and add multiple items and groups for their menus.
- Based on the items and combo system user can customize their menus dynamically, without updating the QR code.
- System user can view multiple statistics data about their menus based on customer’s QR scans and they can change between different subscription plan.

- By scanning the QR code end users or customers can view available items, combo and promotional offers right through their phone.

Car Hub | Next JS, TypeScript, Tailwind CSS

- Explore various cars from manufacturers worldwide
- Apply filters based on fuel type, year, make, and model of the car
- View additional details and a 360-degree image of the car
- Next.js App Router for smooth navigation and server-side rendering for SEO benefits
- Used custom filter elements, combo boxes, and modal components for a seamless user experience.

News Portal | Django, PostgreSQL, Vanila JavaScript, Ajax, Bootstrap, AWS

- Admin dashboard for 3 types of users (reporter, moderator, admin)
- The reporter can add reports and edit the previous report
- The moderator approves the report and different trending and special news
- Admin suspends reporter and moderator and change their access credential
- News portal has home page which shows different category news in most trending order
- The user can toggle between English and Bengali language mode to read in their convenient language along with they can search and get different calendar date news from the news archive.
- Deploy the project in AWS EC2 instance

Real-Time Face and Number Plate Recognition | Python, OpenCV, EasyOCR, Django, AWS

- This project was a security app, which takes CC camera input then identify and save unknown face along with number plate of the vehicle in the database
- System user can add name and other information with the unknown face
- The system can identify known faces and vehicle information from the local database
- The system user can go through different calendar time and check the list of visited car and people around that CC camera area
- Deploy the project in AWS server