Ragy Sameh Wasfy

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Ragy Sameh RagySamehW

Profile

As a CS student, I'm passionate about using technology to solve real-world problems. Proficient in Python, Java, and C++, I thrive in collaborative environments and enjoy tackling complex challenges. Eager to contribute my skills to innovative projects and continuously learn and grow in the field of technology.

Education

Nefertari International School *2008 – 2021*
National Diploma

- Math 72%

MIU (Misr International University) *2021 – 2025*
Computer Science (Artificial Intelligence)

- GPA: 2.8

Experience

Summer internship *Giza, Egypt*
ACT INTERNATIONAL *Summer 2022*

- Provided technical support for Oracle Opera Cloud, troubleshooting system issues and ensuring seamless hotel operations.
- Assisted with system configurations, user management, and resolving connectivity or performance issues.
- Collaborated with teams to optimize workflows, enhance system efficiency, and improve user experience.

Summer internship *Giza, Egypt*
Logestica *Summer 2023*

- Provided IT support, troubleshooting hardware, software, and network issues to ensure smooth daily operations.
- Collaborated with teams to implement solutions, enhancing system performance and user experience.
- Assisted in maintaining logistics systems, resolving technical disruptions, and optimizing workflow efficiency.

Summer internship *Cairo, Egypt*
Itworx *Summer 2024*

- Developed responsive web applications using JavaScript, Python, CSS, and HTML, ensuring seamless user experience.
- Implemented back-end logic, optimized databases, and integrated APIs for enhanced functionality and performance.
- Collaborated in an agile environment, improving problem-solving, adaptability, and teamwork skills.

Publications

Classification of Brain Tumors Using Diverse Deep and Machine Learning Methodologies December 2004
(MIUCC-24), ***Ragy Sameh***,
IEEE Xplore

Projects

Simple Super Market system *github.com/RagySamehW*

- Fall 2021
- This project involved developing a basic supermarket system using C++ as part of a group endeavor. The system simulated the operations of a supermarket, allowing the admin (owner) to manage product inventory stored in a file and facilitate checkouts for customers by calculating their total purchases.
- Tools Used: C++

Online Web site *github.com/RagySamehW*

- Spring 2023
- Our project involved building an online store website with integrated front-end and back-end functionalities. We provided comprehensive features for the admin to manage products seamlessly, and for customers to sign up, sign in, and efficiently complete orders, ensuring a smooth shopping experience.
- Tools Used: HTML/CSS/JavaScript/NodeJs

School System Web Project *github.com/RagySamehW*

- Fall 2023
- Our Software Engineering project, built with PHP back-end and HTML/CSS front-end, is a School Management E-Learning website. Teachers manage attendance and share course materials, parents access fees and grades, and students view course content. This project showcases our web development skills and commitment to improving education through technology.
- Tools Used: HTML/CSS/JavaScript/PHP

Credit Card Number Reader *github.com/RagySamehW*

- Fall 2023
- I developed a credit card number reader using Python and OCR (Optical Character Recognition) technology. This project allows the extraction and validation of credit card numbers from images or scanned documents, enhancing data processing efficiency.
- Tools Used: Python

Classification of Brain Tumors Using Diverse Deep And Machine Learning Methodologies *github.com/RagySamehW*

- Fall 2023
- Our machine-learning strategy utilizes advanced methods like Convolutional Neural Networks (CNN), DenseNet-121, Random Forest, Naive Bayes, Logistic Regression, Support Vector Machine (SVM), Decision Tree methods, VGG16, ResNet50, and K-Nearest Neighbor, each with unique skills for recognizing complex patterns, spatial hierarchies, and distinguishing benign and malignant cancers.
- This project resulted in a research paper that was published in IEEE, presented at the 4th International Mobile, Intelligent, and Ubiquitous Computing Conference (MIUCC-24). You can find the paper at: IEEE Xplore.
- Tools Used: Python

Optimizing Binary Image Compression with Constant Area Coding Using Genetic Algorithms *github.com/RagySamehW*

- Spring 2024
- The project explores Constant Area Coding (CAC) for compressing binary images using Genetic Algorithms. It optimizes block sizes for maximum efficiency, reducing data required. The technique enhances data storage and transmission while maintaining image integrity, demonstrating its effectiveness.
- Tools Used: Python

Hand Tracking-Based Mouse Control Using OpenCV and MediaPipe *github.com/RagySamehW*

- Spring 2025
- Developed a computer vision-based system for controlling the mouse using hand gestures. Utilized OpenCV,

MediaPipe, and PyAutoGUI to track hand movements, map them to screen coordinates, and perform actions like click, drag, and double-click.

- Implemented an exponential moving average for smoother cursor movement and introduced a region of interest (ROI) for precise control.
- Tools Used: Python, OpenCV, MediaPipe, PyAutoGUI

Sonocardia – AI-Powered Mobile App for Heart Disease Detection

github.com/RagySamehW/Grad_Pro

- **Graduation Project** – Misr International University (2024 – 2025)
- Designed and developed a complete AI-powered mobile health platform for detecting cardiovascular diseases from heart sounds and ECG data, focusing on accessibility for high-risk individuals and remote patients.
- **Hardware Development**
  - Created a custom embedded stethoscope using **ESP32-WROOM-32** and **MAX9814** microphone amplifier for precise heart sound acquisition.
  - Integrated **AD8232** ECG module to capture real-time electrocardiogram data.
  - Enabled wireless streaming to the mobile app via Wi-Fi for synchronized ECG and heart sound analysis.
  - Designed a portable, energy-efficient system suitable for wearable use.
- **AI & Signal Processing**
  - Built a multi-stage preprocessing pipeline: **bandpass filtering (20–500 Hz)**, wavelet denoising, silence trimming, and Min-Max normalization.
  - Extracted features using `Librosa`, `scikit-learn`, and `noisereduce` (e.g., MFCCs, spectrograms).
  - Implemented and trained **CNN**, **Random Forest**, and **Transformer-based models** for murmur detection and severity classification.
  - Achieved **85% accuracy** with CNN and **83%** with Random Forest on real-world datasets.
  - Built ECG abnormality detection pipeline targeting *AFib*, *VTach*, and other arrhythmias.
- **Mobile Application**
  - Developed a cross-platform app using **Flutter**, integrating ESP32 and ECG input for real-time monitoring.
  - Core features: waveform visualization, AI-driven analysis, result summaries, and risk-level alerts.
  - Supported secure report sharing and doctor-patient in-app communication.
  - Triggered emergency alerts automatically on critical health events.
  - Backed by **Firebase Firestore** for real-time syncing, authentication, and patient record storage.
- **Impact**
  - Bridged the healthcare gap for underserved communities through continuous, proactive cardiac monitoring.
  - Enabled early detection and intervention for potentially life-threatening heart conditions.
- **Tools Used**: ESP32, MAX9814, AD8232, Python, TensorFlow, Flutter, Firebase, Librosa, PyTorch

Technical Skills

- **Programming Languages:**
  - *Proficient:* Python, Java, C++, JavaScript, Dart
  - *Intermediate:* C, C#, SQL, PHP
  - *Frontend:* HTML, CSS
- **Frameworks & Technologies:**
  - *Mobile/Web:* Flutter, React.js, Angular, Node.js, .NET
  - *AI/ML:* TensorFlow, PyTorch, scikit-learn
  - *Databases:* Microsoft SQL Server, MongoDB, Firebase (Firestore)
  - *DevOps & Tools:* Docker, Git, GitHub