Ibrahim Mohamed

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EDUCATION

Cairo University   *Sep 2019 –*
Bachelor of Engineering: Systems & Biomedical Engineering; GPA: 3.5/4   *Expected Jul 2024*
Major: **Software & Data Science Engineering**

- ***Undergraduate Coursework***: Data Structures & Algorithms, Object-Oriented Programming, Databases, Microcontrollers, Computer Graphics, Computer Vision, Probability and Statistics, Machine Learning, Digital Signals Processing, Information Systems, Medical Imaging
- ***Graduation Project:*** DL- Driven Zero-Fingerprint Medical Viewer for Brain Tumour Segmentation & MRI Sequence Synthesis *(in conjunction with **Sejong** University – South Korea and **Ain Shams** Medical School – Egypt)*

SKILLS

- **Programming Languages***:* JavaScript, Python, C/C++, Java
- **General Concepts**: Data Structures, Algorithms, Object-Oriented Programming, Problem Solving, DevOps, SDLC, RESTful APIs
- **Frontend**: HTML, CSS, React, Next, Tailwind, UI/UX
- **Backend***:* NodeJS, Django, Spring
- **Desktop Applications**: Qt6, ElectronJS
- **Databases**: PostgreSQL, MongoDB
- **Operating Systems**: Windows, Linux (Ubuntu)
- **Version Control***:* Git/GitHub
- **Hardware:** AVR, ARM Interfacing, ROS
- **Tools***:* Docker**,** Kubernetes

PROJECTS

- **Operation Rooms Department Manging System**
*Web system for doctors, patients & nurses using **React, NodeJS, MongoDB***
- **Video Call (Desktop & Web) Application**
*Video calls application developed using **JavaScript, ElectronJS & Web RTC***
- **Digital Filters Design Suite**
*Real-time digital filters app that allows users to create their filters by placing zeros and poles on z complex plane using **JavaScript, KonvaJS & Django***
- **Medical Equipment Repair VR Game**
*Training game for BME students to learn how to fix/maintain high-cost diagnostic modalities using **C#, Unity & Oculus Quest 2***
- **Computer Vision Toolkit**
*Implementing CV Algorithms like SIFT, Canny, Active Contour, Hough transforms and Facial Recognition from scratch in **Qt C++***
- **Voice Fingerprint System (Alexa-Like)**
*Speaker recognition system for authentication using voice biometrics deployed on **React & Django** web app*
- **Cairo University Racing Team Website**
*Established the first website for CU Racing Team developed using **NextJS, Tailwind CSS** & Next Server Actions*
- **Equalizer in Frequency Domain (Frequalizer)**
*Multi-usage Equalizer for General Signals, Music, Vocals, Medical Signals in frequency domain using **Python***
- **Anti-Theft Vehicle Handle System**
*Vehicle Handle Control unit that supports an anti-theft locking capability on STM32 Microcontroller with GPT Driver written in **Embedded C***
- **Door Locking Security System**
*Unlock door using password using **Embedded C** & 2 **ATmega32** Microcontrollers implementing **UART** protocol and Peripherals Drivers*

TRAININGS & INTERNSHIPS

- **Siemens Digital Industries Software**, *Software Engineering Trainee*   *Oct 2023 –*
  - Write effective code, using appropriate data structures and algorithms on the professional SW development level.   *Present*
  - Developing Industrial web applications using Angular & Spring Boot with the use of advanced design patterns & architectures.
- **Neureveal Inc**, *AI Software Engineering Intern*   *Aug 2023 –*
  - Research and implement appropriate machine learning algorithms for computer vision applications (object segmentation, anomaly detection)   *Oct 2023*
  - Contributed to the development of the NeurevealViewer using tools React, Tailwind CSS following the international healthcare standards.
  - Played a pivotal role in the creation and implementation of a robust user management system for hospitals and radiology centres.
- **Siemens Digital Industries Software**, *Embedded Software Engineering Trainee*   *Aug 2022 –*
  - Microcontrollers fundamentals (CPU Architectures, Memory, Linkers, Compilation, Interrupts, Bootloader)   *Oct 2022*
  - Learning RTOS fundamentals and AUTOSAR (OS/ Layers)
- **Canon Medical Systems***, Hardware Engineering Intern*.   *Jul 2022 –*
  - Field Service on Canon & Konica Xray, Computed Tomography & Ultrasound systems   *Aug 2022*
  - Maintenance, troubleshooting & installation of Xray & Ultrasound Systems
- **Siemens Healthineers**, *Hardware Engineering Trainee*.   *Sep 2021 –*
  - Service Engineering for Magnetom MRI imaging modalities & Advia Centaur laboratory systems   *Oct 2022*

COURSES

- Object Oriented Programming in Java (Duke University)
- Algorithms, Data Structures & Graphs (UC SanDiago)
- IBM Machine Learning Professional Certificate
- Machine Learning (Stanford University)
- VR/AR Game Development Diploma (412Labs & US Embassy Cairo)
- IBM DevOps & Software Engineering Professional Certificate

VOLUNTEERING EXPEREINCE

- **Head of Autonomous Driving,** *Cairo University Racing Team*
- **Ex-Chairman,** *IEEE Cairo University SB*
- **Ex-Vice-President,** *CUFE Student Club*
- **Branding Director,** *IEEE Region 8 NASYP Congress 2023*

AWARDS & HONORS

- **Second Place,** 6th Undergraduate Engineering Mathematics Research Forum
- **Participant,** IEEE Xtreme (Problem Solving Competition)
- **Second Place,** Geniuses Student Competition Cairo University