Mohamed Ahmed Ali

mohahmx2@gmail.com | Giza, Egypt | (+20)1113393095 | Linkedin | GitHub | Kaggle | Behance

PROJECTS *(full Data Science portfolio)*

American Express Credit Card Default (Churn) Prediction - *Link* Aug 2022

- Performed EDA to find key insights in customer data (e.g. kde distribution, variables correlation, outlier plot)
- Trained extreme gradient boosting machine to fit the data and obtained Gini Coefficient of 80%
- Did a study-case using data to come up with better solution to default prediction with risk managing in mind

3D Jaws Segmentation From CT scan images Using PyTorch - *Link* Mar 2022

- Built a neural network that utilize U-net architecture with EfficientNet as encoder.
- Achieved average of 98% dice score across the 3 axes.
- Aimed at aiding doctors' decision to determine the best course of action to take considering patient heath.

Neural Style Transfer Using Convolution Neural Network (Notebook) Mar 2022

- Created a python Jupyter script that takes content and styles images and blend them using optimization technique
- Used VGG-19 architecture as a backbone for model

Simulating Steering Wheel Inputs Through Webcam for Racing Video Games April 2022

- Used Python MediaPipe to track and calculate the angle of each hand to represent a steering wheel
- Used the resulted data to simulate the keystrokes of keyboard and joystick

Implementation of Various Image Processing Algorithm Research Papers Feb 2022

- U-net for medical segmentation in PyTorch python
- YOLO for object detection in real-time
- VGG, ResNet and GoogLeNet/InceptionNet CNN implementation

Facial Verification, Computer Vision Project Using Python April 2019

- Used Python OpenCV and Dlib library to develop a facial detection and verification script based on histograms of oriented gradients (HOG) feature descriptor.

Developed A Finite Element Solver and Post-Processor Using MATLAB May 2021

- Applied FEM theory to solve in-plane and out-of-plane loading and comparing it with NX Nastran.
- Applied Gauss and Hammer Numerical Integration Techniques to facilitate the solver.

6 DOF Airplane Simulator in MATLAB's Simulink April 2021

- Combined Airframe Model code with Rigid body dynamics solver in order to build the complete Airplane Non-linear Flight Simulator.
- Linearized the equations of motion and decoupled them into Longitudinal & Lateral dynamics in the state space representation.
- Implemented the autopilot on Simulink to conduct a Software-in-the-Loop simulation of the airplane.

SKILLS

- **Programing Languages**: Python, SQL, Matlab, C/C++
- **Framework & Libraries**: Pandas, Numpy, Scikit-learn, Matplotlib, Seaborn, Tensorflow, Pytorch, OpenCV, XGBoost, ONNX, Beautiful Soup, Tableau, Jupyter, PySpark

- **Data Science & Miscellaneous Technologies**: DS Pipeline (*cleansing, wrangling, visualization, modeling, interpretation, EDA*), Git, Docker, AWS data stack (*S3, Athena, Glue, SageMaker, Data Wrangler*)

- **Engineering**: Ansys, Femap, Simulink, Solidworks, proteus

---

- **Motion Graphics/ Video Editing:** Adobe After Effects, Adobe Premiere pro, Blender 3D, Photoshop, Illustrator, Sony Vegas
- Compositing, rotoscoping, motion graphics, Tracking, Color grading, color keying, Animation, Visual effects
- 3D animation, Environment design, concept arts
- AI tools: Deep Fake, GANs and neural style transfer

EXPERIENCE

Machine learning Engineer @ OmdenaAI - Intern Feb 2022 – Mar 2022

(Skills: Predicative Analytics, Machine learning, Data Science)

- Utilized python to implement a CNN for classification of melanoma in lesion images of patients
- Applied sveral approaches to deal with imbalanced data including class weighting and statistical sampling
- Deployed the model on the cloud where it can be used easily with a cell phone to detect cancer skin and positively impact millions of people

Aerospace Engineer @ EgyptAir - Intern Jul 2019 – Dec 2019

(Skills: Data Analytics, Microsoft Excel, Maintenance & Repair, Mechanical Engineering)

- Carried out repair and maintenance procedures of 5 different airplane types
- Conducted inspection and calibration of aircraft equipment and instruments to insure their precision
- Suggested a predictive maintenance strategy using regression models to predict remaining useful life (RUL)

Co-Founder of TechQuotes – Part time 2016 - 2020

*(Recognized as one of the top followed Technology hubs in Egypt and the MENA region with more than **400,000** followers)*

- Revolutionized new ways to spread technology literacy through an easy to follow medium and inspired thousands of young folks to pursue a career in Tech
- Reviewed scripts, collected data for SEO/marketing and maintained the overall quality of the final product
- Led the aesthetic design and the video editing aspects of the brand

Freelance Motion Graphics Designer 2015 - Present

- Created motion graphics and full projects for multiple clients ranging from 2D and 3D animations Behance
- Maintained 5-star rating with over 60+ positive reviews on freelancing platform Fiverr

EDUCATION

- **Cairo University – Faculty of Engineering** 2017 - 2021
  Bachelor of Engineering - Aerospace, Aeronautical and Space Engineering Giza, Egypt
  Thesis: Finite Element Solver and Post-processor for 3D solids in MATLAB
  Relevant Coursework:

  - Calculus I-IV
  - Linear Algebra
  - Probability & Statistics
  - Machine learning Fundamentals