# Gad Mohamed Gad Computer engineer

BACHELOR | NILE UNIVERSITY (transferred from MUST)

2017 - 2021

Major: Computer Engineering | CGPA: 3.88

with a merit-based full scholarship for academic performance

BACHELOR | Misr University for science and technology 2015 - 2017 Major: Electronics & Communication Engineering | CGPA: 3.95

- G. Gad, G. Eyad, B. Mokhtar "An optimized video analysis framework for IoT devices: Classroom management case study" in IEEE 7th World Forum on Internet of Things, 2021. (ongoing).
- G. Gad, A. Annaby, M. Saeed, NK. Negied, "real time lane instance segmentation using SegNet and image processing" in IEEE Novel Intelligent and Leading Emerging Sciences, 2020.

- Languages C++ (mainly), Python, C, and Java
- TensorFlow, Keras, scikit-learn, OpenCV, ROS2, Cadence, Xilinx, and MATLAB
- Excellent command of English (IELTS: 7.5).

### Machine learning intern at UN ESCWA and UN OICT

Nov. 20- present

Working on satellite imagery analysis for urban development.

### Computer vision & robotics Intern at Vortex

Sept. 20- present

Working in the software department for the RoboSub 2021 competition AUV team.

### Blockchain researcher at WINC, Nile university

June. 20- Jul. 20

- A joint research project (ASRT & Nile university) for modeling Covid-19 spread, and track cases.
- My duty was to design & implement a blockchain network using RSA encryption.

### Junior teaching assistant, Nile university

Sept. 19- Jan. 20

Supervised students in the linear algebra course projects.

### Intern at National Research Center (NRC)

Aug. 19- Sept. 19

- Attended sessions by members of research centers at NRC and ERI.
- Participated in an edge detection project on FBGA.

## Participant at IBM blockchain development workshop

Feb. 19

MCIT-AWS machine learning training program(ongoing)

Advanced machine learning specialization (ongoing)

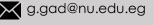
worked with IBM engineers on a car agency management system using Hyperledger.

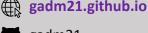
Awards		

•	TICO innovation competition award	Nov. 20
•	Best Poster Award at the NRSC2020 conference	Sept. 20
•	3 <sup>rd</sup> place in IT&CS track in the Egyptian junior researcher competition	Aug 20
•	Electronics Research Institute Internship certificate	Aug 19
•	1st place in "Networking" course project in the Undergrad Research Forum	Jul. 19
•	Blockchain Developer exploratory & mastery badges from IBM	Feb. 19
•	Scientific Research Fundamentals camp certificate from NU	Aug. 18

- Deep learning specialization
- TensorFlow developer professional Cert.
- Advanced data analysis nanodegree
- Al for medicine specialization
- Software Testing MicroMaster
- Blockchain: foundation & use cases
- Introduction to Genomics technologies
- Responsive website development basics
  - Extracurricular activities
- Writer in Nu-Insider newspaper (university newspaper)
- Competed in ACM competitive programming competition and passed the qualifications phase to the ECPC.
  - Competed in Google's Code Jam competitive programming competition and passed the qualifications phase.











# Picked projects

# Graduation project: Real-time Crash avoidance system using CV and AI:

- **GP1** implemented, tested, and presented perception algorithms: Lane detection, depth estimation, Traffic sign classification, and Car detection & tracking and control algorithms: Model predictive control (MPC).
- **GP2** started with the objective of refining GP1 results by using deep-learning based methods and integrating results in an efficient pipeline. Many DL approaches were explored, YOLOv3 & LaneNet were used, and published a paper entitled: "real-time lane instance segmentation using SegNet and **image processing**".

## Machine learning projects

- Lightweight video analysis optimized for IoT (research paper) (ongoing)
- Brain Tumor segmentation for MRI (ongoing)
- Chest x-ray medical diagnosis. With evaluation & visualization using AUROC & GradCAM
- Image captioning using transfer learning (pretrained InceptionV3) and LSTMs
- Lane instance segmentation
- Covid19 spread prediction using seq2seq model
- Text summarization of customer reviews with seq2seq with attention
- Face Recognition using Haar Cascade classifier and PCA
- Noisy MNIST classifications using KNN and evaluated with LOO cross validation, all without using and libraries.
- Risk modelling using tree-based models
- YOLOV3 detection pipeline using keras & Pytorch

# Other projects implemented throughout my study

- $Server/client\ Machine\ Instruction\ Interpreter\ with\ CPP:$ 
  - Following OOP concepts like abstraction, inheritance, polymorphism, and encapsulation
  - Used UML diagrams to demonstrate relation and communication between objects
  - Implemented features like multithreading, TCP socket connection, and affinity setting
- Designing ALU with different adder families (CLA, RCA) on Cadence Virtuoso
- · Making a Sign language translator gloves : python, Arduino, MPU, Bluetooth

Projects can be found on <u>GitHub</u> and some are documented on my <u>website</u>