Gad Mohamed Gad

Machine Learning Engineer

CONTACTS

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(can relocate)

EDUCATION

MSc CS (AI Spec.) | Lakehead University, ON, Canada 2021 – 2023
Thesis student - Research Assistant
Vector Institute AI Scholarship recipient 21/22

BSc Computer Engineering | Nile University, Egypt 2015 - 2021
Merit-based full scholarship for academic performance (CGPA: 3.88)

SKILLS

- **Languages** Python, able to work with C++, C, and Java
- **Frameworks** Numpy, Keras, Pytorch, sklearn, Pandas, etc.. able to learn others.
- Arabic native speaker.
- Excellent command of English (IELTS: 7.5).

PUBLICATIONS

- *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.*
- *G. Gad, G. Eyad, B. Mokhtar "Towards optimized IoT-based context-aware video content analysis framework" in IEEE 7th World Forum on Internet of Things, 2021.*

EXPERIENCE

Teaching & Research Assistant, Lakehead University Sept. 21- Present
- Conducting research in ACCESS research group on medical image processing.
- Supervising labs and marking assignments in CS courses.

Software engineer at Delta-care (part time) Apr. 21- Aug. 21
- Implemented a python backend of an automatic microscope software .
- Implemented full ML pipeline testing different ML methods on automated semen motility and morphology tests.

Software Intern at Vortex Sept. 20- Jul. 21
- Working in the software department for the RoboSub 2021 competition AUV team.

Machine learning intern at UN ESCWA and UN OICT Nov. 20- May 21
- Satellite imagery analysis for urban development.

Blockchain researcher at WINC, Nile University (NU) June. 20- Jul. 20
- A joint research project (ASRT & NU) 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.

AWARDS

- Vector Institute AI scholarship recipient 21/22. Sept. 21
- Best Poster Award at NRSC 2020 conference Sept. 20
- 3rd place in IT&CS track in the Egyptian junior researcher competition Aug 20
- 1st place in "Networking" course project in the Undergrad Research Forum Jul. 19

ONLINE LEARNING

- Deep learning specialization
- TensorFlow developer professional Cert.
- *Advanced data analysis nanodegree*
- AI for medicine specialization
- *AWS certified ML specialist*
- Software Testing MicroMaster
- Introduction to Genomics technologies
- *Advanced machine learning specialization (ongoing)*

OTHER ACTIVITIES

- Passed phase 1 in OpenCV international AI competition.
- Writer in Nu-Insider newspaper (university newspaper)
- Competed in ACM competitive programming competition. Passed qualifications.
- Competed in Google's Code Jam competitive programming competition. Passed qualifications.

SELECTED PROJECTS

- Graduation project – Implemented different perception and control algorithms for vehicles. Studied LaneNet, a deep learning-based lane instance segmentation method, and published our work in a paper titled: "*real-time lane instance segmentation using SegNet and image processing*". (research project)
- Lightweight video analysis optimized for IoT (research paper)
- MRI Brain Tumor segmentation for MRI (ongoing)
- Semen morphology and motility analysis using Mask RCNN, YOLOV5, SORT (tracking algorithm), and computer vision operations like morphological operations and Connected component analysis. Data collection, annotation, augmentation, and model building, training, and evaluation were all performed in this project.
- YOLOV3 architecture and postprocessing pipeline using keras & Pytorch.
- Chest x-ray medical diagnosis, evaluation/visualization with AUROC & GradCAM
- Image captioning: Image feature extraction with pretrained model. Tokens generated with LSTM starting from image embeddings.
- Text summarization of customer reviews with seq2seq with attention
- Face Recognition: Used Haar Cascade classifier for face detection, PCA for dimensionality reduction, and high-level features classification for face recognition.
- MNIST classification with KNN and LOOCV with plain python.