Gad Gad

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Education

2021 – 2023	**MSc Computer Science, Lakehead University, ON, Canada** Thesis student - Research and teaching Assistant
2015 – 2021	**BSc Computer Engineering, Nile University, Egypt** Merit-based full scholarship for academic performance.

Skills

Languages	Python, C++, SQL
Tools & Libraries	Keras, Pytorch, sklearn, AWS, Docker, Robot Operating System (ROS)
Cloud Services	AWS certified. Managing AWS ML services and resources.

Experience

Sept. 21 - Present	**Research Assistant,** Lakehead University. Conducting research in ACCESS research group on federated learning, knowledge distillation, and differential privacy.
Apr. 21 - Aug. 21	**Software Engineer,** Delta-care. Developed the backend of an automatic microscope. Developed deep learning detection, tracking, and segmentation to automate human semen assessment.
Sept. 20 - Jul. 21	**Software Intern,** Vortex. Software development for Vortex RoboSub 2021 competition Autonomous Underwater Vehicle (AUV) team. Designed and implemented collaborative ROS nodes for smart underwater detection and motion planning.
Nov. 20 - May 21	**Machine Learning Intern,** UN ESCWA. Satellite imagery analysis for urban development.

Projects

AWS	S3-triggered AWS Lambda-based PDF processor. Voice assistant based on Whisper and ChatGPT deployed on AWS. Fine-tuning pre-trained language models for semantic analysis of tweets.
Machine Learning	Image captioning, implementing Google's paper: Show and tell. Video captioning, extending on image captioning. Federated Learning with knowledge distillation & Differential privacy. Lane instance segmentation.
Data Science	Website layout A/B testing. Investigating Simpson's paradox. Credit card default prediction.
Satellite Imagery	Urban areas segmentation of 4-band multispectral images. Urban development detection and analysis. Landcover & crop classification using USDA CropScape.

Research Publications

Journal Articles

1   **G. Gad** and Z. Fadlullah, "Federated learning via augmented knowledge distillation for heterogenous deep human activity recognition systems," *Sensors*, vol. 23, no. 1, p. 6, 2023.

2   **G. Gad**, E. Gad, K. Cengiz, Z. Fadlullah, and B. Mokhtar, "Deep learning-based context-aware video content analysis on iot devices," *Electronics*, vol. 11, no. 11, p. 1785, 2022.

Conference Proceedings

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

2   **G. Gad**, A. Annaby, M. Saeed, and N. Negied, "Real-time lane instance segmentation using segnet and image processing," in *IEEE Novel Intelligent and Leading Emerging Sciences*, 2020.

Talks and Presentations

1   **G. Gad** and Z. M. Fadlullah, *Applying computer vision and deep learning to semen morphology and motility analysis*, Oct. 2021.

Miscellaneous Experience

Awards

2021   Vector Institute AI scholarship recipient (17,500 CAD). Awarded by Vector Institute.

2020   Best Poster Award, NRSC 2020 conference (800 EGP).

     3rd place in IT & CS track, Egyptian junior researcher competition (2000 EGP).

     TICO Innovation Award (500 USD).

2019   1st place in "Networking" course project, Undergrad Research Forum.

Certification

2021   AWS certified ML specialist. Awarded by AWS.

     Software Testing MicroMaster. Awarded by University of Maryland University College.

     Advanced data analysis nanodegree. Awarded by Udacity.

2020   TensorFlow developer professional Cert. Awarded by Google.

     Deep learning specialization. Awarded by deeplearning.ai

References

Available on Request