Mohamed Ayman Mohamed

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EDUCATION

Egypt Japan University Of Science & Technology Enrolled: October, 2020 — February, 2025
B Sc. in Computer Science and Engineering CGPA: 3.92 — Top of my class
Full merit-based scholarship until graduation

RESEARCH EXPERIENCE

Egypt Japan University Of Science & Technology Alexandria, Borg El Arab
Machine Learning Researcher August 2023 - ongoing

- Studying robustness of image classification models (CNNs and ViTs) against adversarial attacks (PGD and MIG).
- Making new benchmark for transfer attacks across image classification models (CNNs and ViTs).
- Submitting a paper as first author to CVPR 2025 under title "The Art of Defense: Insights into Adversarial Robustness" under supervision of Prof. Walid Gomaa.
- Making exploratory data analysis for 20 million Arabic tweets about COVID-19.

PROFESSIONAL EXPERIENCE

Outlier.AI Remote
Software Developer for AI training August 2024 - December 2024

- Provide high-quality code to improve AI models in different tasks: code refactoring, testing and implementation with reasoning.
- Spot the weakness of AI models through providing real-test case scenarios and report AI models issues like hallucination and bias.
- Work with big team from the globe to optimize AI models and ensure alignment with project vision.

Digital Egypt Pioneers Initiative in DevOps Ministry of Communications & Information Technology
Trainee May 2024 - November 2024

- Top achiever in completing this intensive training.
- Gained hands-on experience on DevOps tools and cloud computing at AWS.

Ibdaa Academy Alexandria
Coding Instructor December 2021 - August 2024

- Design curriculum for web development and Arduino.
- Lead for winning 2nd and 3rd place in web competition.
- Write book for python beginner.

PROJECTS

Full functional drone system for rescue *GitHub repo*

- Make drones capable of autonomous navigation and recognize faces to do different rescue missions.
- Implement Full stack autonomous navigation system for drone consists of mapping, self-localization, path finding and motion planner with obstacle avoidance.
- Implement face recognition model for drone.

Grocery web app store *GitHub repo*

- Implementation for web application using Django and PostgreSQL .
- All products' data was scraped from online stores.

Momentum Integrated Gradient attack (MIG) *Kaggle Notebook*

- Implementation of new adversarial attack MIG.
- The implementation was tested against ViTB32.
- Attack transferability From VGG19 to ViT32B was compared against PGD-20.

AlphaConnectX *Kaggle Notebook*

- Implementation of agent that solve connect four game based on AlphaZero model.
- The implementation replace backbone of ResNet with ConvNeXt.
- The model training was optimized to use parallel computation.

Lunar lander agent *Kaggle Notebook*

- Implementation of agent that succeed in lunar lander environment in Gym library.
- The implementation is based on Mamba architecture with new modification introduced by me.
- The model was trained using proximal policy optimization (PPO) and generalized advantage estimator (GAE).

CERTIFICATES

- Machine Learning Scientist track from DataCamp: a comprehensive 93-hour program about machine and deep learning foundations.
- Python developer track from DataCamp: a 59-hour path about programming with Python.
- Front End Web Development Professional nano-degree from Udacity.

ACTIVITIES

Google Developer Student Club (GDSC)

- *Core team member*: prepared problem solving sessions for 2022 - 2023 academic year.

ECPC Participant

- Achieved Fiftieth Place, Egypt finals 2022.

Prepare for Future Expo

- Judge for scientific research projects in 2022 season.
- Judge for AI projects in 2023 season.

SKILLS

- **Programming languages:** Python, C/C++, Java, MATLAB and Bash.
- **Machine Learning:** Numpy, Panda, Scikitlearn, Tensorflow and Pytorch.
- **DevOps:** Docker, Kubernetes, GCP and AWS.
- **Backend:** Git/Github, Node.js, RESTful API, PostgresSQL and Redis.
- **Web development:** HTML, CSS, JavaScript, jQuery and Express.
- **Languages:** Arabic (Native Speaker) and English (IELTS band 7.0).