Amgad Abdallah Mahmoud

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EDUCATION:

- Cairo University: M.Sc. in Data Science (2020 2023).
 - During this journey, I integrated Graph Neural Networks with Deep Reinforcement Learning to generate or optimize molecules towards desired chemical and geometrical properties in 3D space. Also, I extended the well-known SAC algorithm to operate on molecular graphs and to handle the multi-discrete action space. Moreover, the output included three high impact publications.
- Helwan University: B.Sc. in Business Information System (distinction with honors 2016 2020).

PREFERRED JOB:

AI Researcher – Quantum ML Researcher - Data Scientist - Machine Learning Scientist - Advanced Analytics.

SKILLS and TECHNOLOGIES:

1- Programming and Scripting Languages:

- Includes but not limited to: Python R Java C++ C#- SQL HTML5 CSS3– XML SQLite MongoDB Neo4J PostgreSQL.
- 2- Tools:
 - Includes but not limited to: Networkx sciket-learn TensorFlow Pytorch Pytorch geometric- MSSQL server - Dash with Plotly - Power BI – Tableau -Qlik-Sens – seaborn – matplotlib.

3- Theory and concepts:

 Includes but not limited to: Machine learning/Deep learning – Graph neural networks - Deep Reinforcement Learning – Quantum Machine Learning – Quantum Computing and Information - DS and Algorithms - NLP - CV – Time series -Multivariable Calculus - Linear Algebra – graph theory - Data Visualization & Communication - Advanced Statistics.

CAREER HIGHLIGHTS:

Teaching Assistant. (Full-time)

At The British University in Egypt. (Feb 2023 – present)

- ✓ Preparing labs and teaching AI and CS related courses such as Deep Learning, Data Science, OOP, and more.
- Involved in research group interested in computational physics, Graph Neural Networks, Deep Reinforcement Learning, Generative AI, and Quantum computing.

Machine Learning and Graph Algorithms Engineer. (Contract)

At Motiftech.ai. (June 2022 - present)

- ✓ Applying Graph algorithms in analog circuit design.
- ✓ Applying Graph Neural Networks in analog circuit design.

Data Science Instructor. (Part-time / On Call)

Including Epsilon AI Institute, and Digital hub. (Mar 2022 - present)

- ✓ In Epsilon I have developed sessions and coding materials. Also, I have been involved in teaching 2 diplomas each one lasted for 6 months (216 hours per diploma).
- ✓ In Digital hub I prepared classes and codes as well. I have conducted training in AI and machine learning in We and Orange companies and achieved 5/5 in student's evaluation.

Teaching Assistant. (Full-time)

At New Giza University. (September 2021 – October 2022)

- ✓ Developing and designing interactive Labs, Assignments and quizzes for Data science, programming, and AI courses.
- ✓ Involved in a research group, interested in Machine Learning with graphs, Deep learning, Deep Reinforcement Learning.

Data Scientist. (Full-time)

At Merck Sharp & Dohme (MSD). (Aug 2020 – September 2021)

- ✓ Designing and Building Data Science projects to develop and deliver data driven usecases.
- ✓ Designing, building, and optimizing Machine and Deep Learning models mainly for Time Series and demand forecasting.
- \checkmark Representing and communicating the results.

Data Science Instructor (Volunteering).

At Google Developer Student Club. (Aug 2020 - Present)

✓ Explaining topics in Data Science and Machine Learning and developing learning paths.

Data Science and Analytics freelancer.

At Up-work.com. (Nov 2019 – Aug 2020)

 \checkmark By building models that fit the problem best and communicating the results.

Publications:

- ✓ Abdallah, Amgad & Alyan, Nada & Elkerdawy, Ahmed & Tanabe, Shihori & Andres, Frederic & Pester, Andreas & Ali, Hesham. (2024). Geom-SAC: Geometric multi-discrete soft actor critic with applications in de novo drug design. IEEE Access. 10.1109/ACCESS.2024.3377289.
- ✓ Abdallah, Amgad & Alyan, Nada & Elkerdawy, Ahmed & TANABE, SHIHORI & Andres, Frederic & Pester, Andreas & Ali, Hesham. (2023). A New Graph-Based Reinforcement Learning Environment for Targeted Molecular Generation and Optimization. In ICSIE 2023 conference. (Awarded as the best paper, and awarded as best presentation in the conference).
- ✓ Abdallah, Amgad & Alyan, Nada & Elkerdawy, Ahmed & TANABE, SHIHORI & Andres, Frederic & Pester, Andreas & Ali, Hesham. (2023). 3D molecular generation using deep learning approaches: A review on theory and experiment. (Manuscript submitted for publication).
- ✓ Greneche, Nicolas & Andres, Frederic & Tanabe, Shihori & Pester, Andreas & Ali, Hesham & Mahmoud, A & Bascle, D. (2023). Leverage data security policies complexity for users: an end-to-end storage service management in the Cloud based on ABAC attributes. 10.13140/RG.2.2.25475.89123.

Teaching:

Deep LearningMachine LearningArtificial Neural NetworksDatabasesData ScienceIntroduction to programming and Problem SolvingProbability and StatisticsObject Oriented Programming

GitHub:

- <u>https://github.com/AmgadAbdallah</u>
- https://github.com/Amgad-Abdallah-Mahmoud

VOLUNTEERING and ACTIVITIES:

HR head at EYC Fundraising vice-head at ASME President at Min-Agl-Misr Innovegypt camp participant IT member at CFA ambassadors Volunteering in Life Makers Volunteering in Resala Volunteer listener at 7 Cups Internship at National Bank of Egypt

Available for Relocation & Travel