Ahmed Hani Ibrahim

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Education

- [2018-Postponed] M.Sc Candidate Student Supervised by Prof. Aly Fahmy
  - **Thesis Title**: Style-Transfer Text Paraphrasing
- [2015-2017] Pre-master M.Sc Student at Faculty of Computers and Information Science, Cairo University
  - **Excellent Grades** in Deep Learning for NLP, Algorithms and Bioinformatics courses
- [2011–2015] Graduated from Faculty of Computers and Information Science, Ain-Shams University
  - **Excellent Grade** in the Graduation Project
- [2010–2011] High School Certificate, El-Tawfekya Secondary School, Math Section
  - **Excellent Degree**

Qualifications

- **Languages:** Python, Rust, C++, Java, GoLang(*familiar with*), C++(*familiar with*), C#*(familiar with),* JavaScript*(familiar with),* MATLAB*(familiar with),* Lua*(familiar with),* Perl(*familiar with*), Clojure(*familiar with*)
- **Databases/Storage:** MS SQL Server, PostgreSQL, Azure Blob Storage, MongoDB, Redis, S3, MySQL*(familiar with)*
- **Concepts:** OOP, UML Modeling, Functional Programming, Data Structures and Algorithms, Design Patterns, Problem Solving, Artificial Intelligence for Games, Machine Learning, Swarm Intelligence, Natural Language Processing, Data Analysis, Genetic Programming, Game Programming, Web Development, Multithreading, Image Processing, Data Analysis & Visualization, Data Modeling, MLOps, Containerization, RESTful API, Generative AI
- **Operating Systems:** Microsoft Windows, Linux-Ubuntu, Linux-Fedora, Linux-Debian
- **Soft Skills:** Self-learning, Leadership, Planning, Team work, Mentoring, Creative thinking, Adaptation, Research

Experiences

- **Sr. Machine Learning Engineer** at **talabat** | **Delivery Hero** - Algorithms & ML Engineering Team *(current)*
  - ***Oct 2024 - Present***
    - Working on User Personalization and Ranking feature deployment to improve the user experience
    - Part of the ML Engineering team that builds the ML and GenAI platform of Talabat to serve the Data Science development and deployment lifecycle. Responsible for the ML Workflows domain.
    - Leading the App Voice Ordering feature deployment and delivery that is part of Talabat AI Assistant GenAI engine

  Tech-Stack & Platforms: *Python Full-Stack, Github, GCP, GKE, GCS, BigQuery, VertexAI, DroneCI, ArgoCD, MLFlow, Airflow, FastAPI, Feast Feature Store, TensorFlow, Keras, PyTorch, OpenAI, Langchain, LangGraph*

- **Sr. Principal Machine Learning Engineer** at **DELL Technologies** - Services Global Process Engineering Team *(1 year)*
  - ***Dec 2023 - Oct 2024***
    - Leading the ML Engineering and Infrastructure enablement for the Next Best Action project, which is the core intelligence and GenAI engine and service for Dell's agents and customers facing troubleshooting and support platforms
    - Communicating with the business, stakeholders and leadership board to ensure the team is meeting the requirements and deliverables

- **Principal Machine Learning Engineer** at **DELL Technologies** - Services Global Process Engineering Team *(2 years)*
  - ***Jan 2022 - Dec 2023***
    - Leading the Products and ML Services Deployment team
    - Working closely with the AI/ML & Infrastructure Architects in our team to set the development and deployment pipelines
    - Leading the Process Development workstream that is responsible for setting best practices and templates to take ML models to production

- **Senior Machine Learning Engineer** at **DELL Technologies** - Services Global Process Engineering Team *(2 years)*
  - ***Feb 2021 - Jan 2022***
    - Leading the Products Deployment team who is responsible for ML services development and deployment in production
    - Acts as Tech Lead and runs the Agile process across the team of 8 members from different regions
    - Representing the Deployment team with stakeholders for regular updates and keeping the products/services on-track
    - Product Owner & Technical Lead for Automated Re-Training service as a product for Data Scientists needs and usages
    - Member of AI/ML Architect team to have a standardized system design and architecture to fit our products and services
    - Mentorship responsibilities for the interns and fresh graduates
    - Interviewing candidates for MLOps/ML-Engineering leading positions
  - ***May 2020 - Feb 2021***
    - Working on the Process Mining MLOps and the production pipeline engineering across the team's AI/ML based projects
    - Working with teams across India, US, and Ireland to build data-driven projects to serve Dell's products internal services.
    - Working side-by-side with DS teams to help in any engineering related tasks
    - Responsible for enabling the ML Infrastructure to help the Data Scientists doing their ML models training and inference
    - Architecting the projects system design, jobs/tasks workflow, such as the models training, re-training, and monitoring
    - Core contributor in the efforts for following the best practices during the implementation phases
    - A main contributor to a Data Science framework - Responsible for Orchestration framework
    - Architecting and developing the required SDKs for the data scientist to support their models development

Tech-Stack & Platforms: *JIRA, Azure DevOps, GitLab, Python full-stack, Apache Airflow, ML-flow, Blob Storage, S3, SQL Server, Docker, Kubernetes, Azure ML, Azure Databricks, Domino Data Lab, JupyterHub, Harbor, JFrog, HashiCorp Vault, SonarQube, Blackduck, Checkmarx, Twistlock, Redis, PostgresQL, Jenkins, GitHub, Pivotal Cloud Foundry (PCF), PGVector, Langchain*

- **Data Scientist II at DELL Technologies - Live Optics Team** *(1 year)*
  - Worked on Software Applications Entities Extraction project that aims to extract the application's publisher and its category using some NLP and ML techniques such Embeddings, Named Entity Recognition, K-means and Latent Dirichlet Allocation
  - Worked on Corporate/Free-domain Email Address Recognition project that aims to recognize whether the registered email is from a corporate or free-mail provider. Several NLP and ML based techniques are used such as Embeddings, Named Entity Recognition, K-means and Neural Networks
  - Implemented a customized Peak Detection algorithm for our time-series data points to be plotted on our portal dashboard
  - Consulted some Machine Learning projects from other teams
  - A Main contributor to build a Data Infrastructure for the product using several Big Data technologies such as Microsoft Azure Data Factory, Data Lake, Hadoop, HDInsight and Spark
  - Worked on short-term Data Analysis infrastructure using SQL database, SQL Server Analysis Services (SSAS) and Power-BI
  - Worked on large-scale Data Analysis for our product data sources using Python, SQL, and Power-BI

  Tech-Stack & Platforms: Python, SQL, NumPy, Matplotlib, Pandas, SciPy, SpaCy, NLTK, Scikit-Learn, PyTorch, Power-BI, SSAS

- **Senior Machine Learning Engineer at Nagwa** *(1 year)*
  - A Main contributor to build Nagwa AI framework that supports multiple machine learning based engines
  - Worked on Text Language Recognition module based on Recurrent Neural Networks (RNNs)
  - Worked on Audio De-noising module (Speech Enhancement) using Generative Adversarial Networks (GANs)
  - Worked on Speaker Diarization engine using Gaussian Mixture Models and Mel-frequency Cepstral Coefficients (MFCCs) as a part of the pre-processing module for a Speech Recognition engine and a standalone micro-service
  - Worked on Noise Level Detection engine using Deep Neural Network and MFCC as a part of the pre-processing module for a Speech Recognition engine and a standalone micro-service.
  - Worked on Data Augmentation module for speech and sound data

- **NLP Research and Software Development Engineer at RDI** *(1 year + 8 months)*
  - Implemented an end-to-end pipeline for Arabic Named Entity Recognition engine using Deep Neural Networks and Word-level and Character-level features
  - Implemented an end-to-end pipeline for Dialect (Egyptian/Gulf) Arabic Sentiment Analysis using Jensen-Shannon Generative Adversarial Networks and Deep Neural Networks
  - A main contributor to develop a C++ based OCR system for Arabic (typed and handwritten) documents and journals
  - Built a Graph-based Ontology for Dialect (Egyptian/Gulf) Arabic to be used for context-aware word representation
  - Worked on a search engine system using Solr and Lucene
  - Worked and Researched on state-of-the-art Language Modeling using Recurrent Neural Networks
  - Prepared a Machine Learning and TensorFlow workshop sessions for my colleagues

- **Research and Software Development Engineer at HeuroLabs** *(4 months)*
  - My main role is working on Natural Language Processing tasks and research
  - Participated in a Medical Entities Extractions application
  - Worked into building a Long-short Term Memory (LSTM) Recurrent Neural Network for company's tasks
  - The tools I used were C++, Clojure, Java and Python

- **Software Engineer at NRG solutions** *(3 months)*
  - Worked in Watanya Project which is a website for evaluating charities. I was responsible to implement many some modules in the Assessment part using ASP.NET MVC using Entity Framework

Research & Publications

- **A Multi-Task Learning Architecture for Style-Transfer Text Paraphrasing (M.Sc Thesis)** *(in-progress)*
  - Abstract: Paraphrasing is a core problem in Natural Language Processing that refers to texts that convey the same meaning but with different expressions. We can consider it as a transformation for a given text while keeping the semantics of it. Style-Transfer Paraphrasing preserves the writer's style of writing while generating the paraphrase.

- *Ahmed H. Al-Ghidani and Aly A. Fahmy, "Conditional Text Paraphrasing: A Survey and Taxonomy" International Journal of Advanced Computer Science and Applications(IJACSA), 9(11), 2018.* ***http://dx.doi.org/10.14569/IJACSA.2018.091182***

- **Deep Learning for Hierarchical Question Classification and Generation (ML Pre-masters Course)**
  - A research that tries to classify some of the question grammatical types (Direct Question, Pied-piping Question and Order Question).
  - Auto-Encoder and Deep Neural Networks were used for question features extraction and classification
  - Generation is implemented using the Sequence to Sequence model. The target is to generate a Pied-piping question using Direct Question

Undergraduate Projects

- **Brainizer Intelligent System, A Question Answering System (Graduation Project) (Java)** *(Team of 5)*
  - A Hybrid Question Answering system based on Knowledge-base, Question Classification, Answer Extraction and Information Retrieval engine. Using NLP and ML algorithms, the system extracts the most accurate answer from the user's text.

- **Head Orientation Recognition (C#)** *(Team of 5)*
  - An application that recognizes the human's face orientation using self-made Neural Networks (Multi-layer Perceptron, Radial Basis Function) architecture optimized using PCA for feature reduction.

- **Function Solver using Swarm Intelligence (Python)**
  - An implementation of a natural system to solve 2-or higher dimensional functions using the idea of bird flocks. The project is based on one of Swarm Intelligence algorithms which is Particle Swarm Optimization.

- **Handwritten Digits Recognition (C#)** *(Team of 5)*
  - An application that recognizes the human's handwritten digits using MNIST dataset. The Machine Learning algorithms used for the classification process are: K-nearest Neighbor, Nearest Centroid Classifier.

- **Image Processing Package (C#)** *(Team of 4)*
  - An Image Processing package that supports most of the famous techniques in this field like resize content-aware and more

- **Sky War Revolution (C#, XNA Game Studio 4.0)** *(Team of 4)*
  - A 3D action adventure military plane war game. It is based on 4 modules: Game Play, Environment, Artificial Intelligence and Game Manager. I was responsible for implementing the AI algorithms and techniques

- **Chess AI Engine (C++, SFML Graphic Library)** *(Team of 4)*
  - Powerful Optimized Chess AI Engine where various Algorithms are used efficiently and Statistics with a user-friendly GUI added.

Undergraduate Extracurricular Activities

- **Ain Shams University ACM Student Chapter**
  - Technical Committee Head (2013-2014), Responsible for leading the technical team to develop all the services and applications required by the acmASCIS student chapter at my faculty, in order to increase the chapter's productivity and effectiveness. Web-master for some of the chapter's online utilities like **website** and **forum**. Responsible for establishing and preparing the Local Contest which is a contest to qualify the contestants to the National Contest.

  - **Training Committee Member** (2012-2013), Mentor for the junior trainees to help them to increase their coding and problem solving skills to be ready for the ACM Local, Regional, World Finals Contests. My Roles were the following: Helping on setting a training plan for the first and second year students, teaching them the basic development using C++ language, participating as problem setter in sessions and contests.

  - **Instructor at Machine Learning Summer Course** (2017-2018), Instructed several sessions for Machine Learning and Deep Learning. Prepared the practical of each session using Tensorflow

  - **Instructor at AI Challenge Summer Course** (2013-2014), Responsible for leading the content team to prepare the course's content and sessions. I was an instructor in a session. It was an introductory course about Artificial intelligence for games, it can be considered as Artificial Intelligence for dummies. It contained several sessions talking about Artificial intelligence in general and famous techniques used in game development.

- Solved more than 600 problems on problem solving online judges like **UVa**, **Codeforces**, **TopCoder**, **LeetCode**, and participated in Code jam and Facebook Hacker cup competitions.

- Participated as a contestant for **HackerRank** and **Kaggle** Machine Learning competitions.

- Enrolled in many online courses in Machine Learning and Natural Language Processing at **Coursera** and **Udacity**

- Active Contributor in **Quora**

Honors and Awards

- DELL Technologies Q3-2024 Services President Award for Next Best Action - PSQN feature integration for CSG customer support
- DELL Technologie FY21 Services Innovator award - Highest level of recognition in Dell Technologies Services organization
- DELL Technologies AI COE FY21 Best AI Recognition for Predictive Case Intelligence project - Top 5 percent of the entire company AI projects
- DELL Technologies Egypt COE Innovation Award for Q1-FY21
- DELL Technologies Q2-2021 Services President Award for Case Classification CSG deployment
- DELL Technologies Q3-2021 Services President Award for Next-Best-Action ISG deployment
- Ranked 1st on the pre-master Deep Learning and Natural Language Processing (CS624) course with **A+** grade **(96/100)**
- Got Excellent grade (**195/200**) at the graduation project
- Recommended by the faculty's **Vice Dean Prof. Taymoor M. Nazmy** to participate in **International Journal of Intelligent Computing and Information Sciences**
- Ranked 1st on Introduction to Computer Science Project
- Ranked 12th on acmASCIS Local Contest 2012
- Qualified and participated in ACM ECPC National Contest 2012
- Ranked 1st on acmASCIS I, II senior contests
- Received an honor certificate from acmASCIS Student Chapter for working in the Technical Committee

References

- **Amr Mahdi**
  - Software Engineer at Microsoft USA

- **Ahmed Emad Morsi**
  - Data Scientist / Machine Learning Engineer at Continental, Germany