Ahmed Hani Ibrahim

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Education

- [2017-present] M.Sc Candidate Student Supervised by Prof. Aly Fahmy
- [2015-2017] Pre-master M.Sc Student at Faculty of Computers and Information Science, Cairo University
- [2011–2015] Graduated from Faculty of Computers and Information Science, Ain-Shams University
- [2010–2011] High School Certificate, El-Tawfekya Secondary School, Math Section

Qualifications

- **Languages:** Python, C++, Java, C#, PHP*(familiar with),* JavaScript*(familiar with),* MATLAB*(familiar with),* Lua*(familiar with),* Objective-C*(familiar with)***,** Clojure(*familiar with*)
- **Databases:** MS SQL Server, MySQL*(familiar with).*
- **Concepts:** OOP, UML Modeling, Data Structures and Algorithms, Design Patterns, Problem Solving, Artificial Intelligence for Games, Machine Learning, Swarm Intelligence, Natural Language Processing, Genetic Programming, Game Programming, Web Development, Multithreading, Image Processing.
- **Operating Systems:** Microsoft Windows, Linux-Ubuntu, Linux-Fedora
- **Technologies & Tools:** ASP.NET MVC, Entity Framework, RESTful API, **Flask**, AngularJS*(familiar with),* PHP Laravel, **SciPy**, **Numpy**, **IPython**, **Scikit-Learn**, **Tensorflow**, **Keras**, **PyTorch**, **StanfordCoreNLP**, **Apache Solr**, OpenGL, Bit-bucket, Git and Github, WordPress.
- **Soft Skills:** Self-learning, Research, Team work, Mentoring, Creative thinking, Adaptation, Planning skills.

Experiences

- **Senior Machine Learning Engineer at Nagwa** *(8 months - present)*
  - 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 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 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 as back-end software engineer at the company.
  - Worked in Watanya Project which is a website for evaluating charities
  - I was responsible to implement many some modules in the Assessment part
  - The tools we were using is ASP.NET MVC using Entity Framework

Research & Publications

- **Style-Transfer Text Paraphrasing (M.Sc Thesis)** *(in-progress)*

- Conditional Text Paraphrasing: Survey and Taxonomy *(in-progress) (accepted paper)* **(IJACSA, Volume 9 No. 11, November 2018)**
  - Abstract: We introduce a survey for the Text Paraphrasing task. Also, we propose a new taxonomy for what we call "Conditional Text Paraphrasing"

- **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 Sequence to Sequence model. The target is to generate a Pied-piping question using Direct Question

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 features reduction.

- **Function Solver using Swarm Intelligence (Python)**
  - An implementation of a natural system to solve 2-or higher dimensional function using the idea of birds 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 adventures 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.

Extra-Curricular 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 **Wikipedia**

- Active Contributor in **Quora**

Honors and Awards

- 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 a 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