

Mohamed Essam Fayed

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EXPERIENCE

- **Applied Innovation Center (AIC)** Alexandria
NLP Assistant R&D Engineer *Jan 2021 - Now*
Worked on various NLP tasks to produce high quality models, such as:
 - Developed expertise in currently available LLM inference frameworks and optimizations, LLM benchmarking tools for multimodal and multilingual settings and Instruction Fine-tuned LLMs on Arabic.
 - Worked on Machine Translation project to build multilingual model with focus on low resource Egyptian Colloquial Arabic.
 - Built Arabic Sentence Punctuation/Tokenization model as a preprocessing step in cleaning Arabic monolingual datasets.
 - Mentored new comers and interns.
 - Collaborated with HPC department in setting up SLURM and Kubernetes cluster, testing them, and documenting Machine Learning Engineering process in Docker and Kubernetes.
- **Inova LLC** Alexandria
Ruby on Rails backend developer (Internship) *Aug 2018 - Sep 2018*
 - Learned backend development using rails.
 - Developed a RESTfull API and DB Schema in MySQL.

EDUCATION

- **College of Computing, Georgia Institute of Technology** Online
Masters of Science Computer Science *Spring 2023 - Now*
- **Faculty Of Engineering, Alexandria University** Alexandria, Egypt
Bachelor Of Science In Computer And Communication Engineering; GPA: 3.44 *Fall 2014 - Spring 2020 (5 years + 1 year off)*

PROJECTS

- **Neural Machine translation:** The aim of this project is to develop high quality machine translation system for low resource Egyptian Colloquial Arabic.
 - Automated and participated in building highly parallelizable data pipeline including data gathering, cleaning and preprocessing, and automated a lot of repeated tasks including model evaluation, and scores calculations using either Shell Scripts or Python Scripts with libraries such as Pandas in SLURM environment.
 - Investigated the usage of pre-trained models and LLMs in low resource MT.
 - Implemented transformers variations and made some edits in different components in internal version of fairseq framework.
 - Mastered the skill of planning tasks and setting priorities to experiments to transfer research to production and to balance between both goals.
- **TerminalNB:**
 - Designed and Programmed this project to be a terminal alternative to Jupyter Notebook for the blind users since the edit boxes there were not accessible.
 - Runs within iPython sessions on terminal.

ACHIEVEMENTS

- **CITI Training:** This is the PDF for certificate of completion of Group 2 Social / Behavioral Research Investigators and Key Personnel. You can also verify the certificate here. Sep 2023
- **NVAccess:** NVDA Expert Certification July 2023
- **LinkedIn:** For full list of certificates related to accessibility, Data Science and Soft Skills, please check "License and Certification" section of my linkedin profile.

PROGRAMMING SKILLS

- **Languages:** Python 3, Shell Scripting, LaTeX, C/C++, R, Ruby, Swift, SQL, Java
- **Frameworks:** pytorch, fairseq, hugging face transformers, numpy, pandas, regex
- **Technologies:** NVDA screen reader, Docker, Kubernetes, SLURM, Google Cloud Platform, Microsoft Azure, Vim, Jupyter Notebook, Rails, Xcode, Eclipse (java windows)