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EDUCATION

Bachelor of Artificial Intelligence   **Aug 2020 - Jun 2024**
Kafr El-Sheikh University

GPA : 3.7
Main Courses: Linear Algebra, Statistics & Probability, Data Structures & Algorithms, Machine Learning,
Deep Learning, Natural Language Processing, Introduction to Reinforcement Learning and multi agent design,
Cognitive Psychology.

PROFESSIONAL EXPERIENCE

NLP R&D Engineering Internship   **July 2023 - Dec 2023**
SpeedLegal   *Remotely, California, USA*

- Fine-tuning a pre-trained BERT model for an extractive question answering task on license agreements. The outcome was that the extractive model was able to do average of 20% exact match score and 65% on a set of 16 clauses leading to approximate ~15 minutes decrease in contract review by the legal team.
- Working with model Interpretability and Explainability (LIME). This helped in uncovering the details of the model reasoning in saying why it classified certain legal text under certain classes for reliability.
- Building Retrieval Augmented Generation pipelines with LLMs like GPT-4 & LLaMA2 and Embedding Models like BGE large. Thereafter, properly evaluating the information retrieval system using precision@k, recall@k & mean reciprocal rank. This improved the contract review process by iterating and reaching a high recall@6 of 96% for NDA agreements.

TEACHING EXPERIENCE

Teacher Assistant (TA)   **Jan 2023 - March 2023**
Kafr El-Sheikh University

- Assisting in teaching and preparing reinforcement learning lectures, materials as well as demonstrative lab exercises in the "Introduction to Multi-Agent Systems Design" course for second year students with the main instructor Fatma Nada.
- Teaching basic RL fundamentals including: Multi-Armed bandits, Markov Decision Processes (MDPs), Bellman Equations and optimality & Dynamic programming. (class size: 30 students)

PROJECTS

Crash PPO Agent   **Jan 2023**
Research Project

- Implementing, from scratch, a policy gradient algorithm gave me insights and hands on experience on deep reinforcement learning, specifically, Proximal Policy Optimization (PPO) on an agent that plays the retro game Crash Bandicoot: the huge adventure.
- Using Pytorch for creating the actor and critic shared CNN architecture as well as the heads for the actor and the critic.
- Using openAI's gym retro environment. The agent learned to play one level of the game with an average cumulative rewards of 75+.
  Project Link on Github: CrashAgentPPO

Awards

2nd Place In Nile University's Undergraduate research forum　　　　　**October 2020**
Nile University

- This was an undergraduate research competition that I got second place in by training an End-To-End facial recognition system using OpenCV for car security surveillance which checks whether the driver is the car owner or not to prevent burglary.

Activities & Community Service

Algorithms & Data Structures Tutor in (GDSC)　　　　**July 2022 - September 2022**
Kafr El-Sheikh University's Google Developer Student Club

- I gave teaching sessions with other tutors about Data Structures and Algorithms.

Artifical Intelligence Study Roadmap　　　　　　　　　**August 2022**
Kafr El-Sheikh University

- I published an article where I built an organized, well-planed and resourceful academic undergraduate road-map for studying Artificial Intelligence referencing universities that teach this major.
- Specifically built with the nearest MOOCs (Massive Online Open Courses) that have the same content. I listed all the resources and citations. roadmap : AI Academic Road-map

Skills

Programming　　　　Python, C, OOP, Git, Pytorch, Linux

Communication　　　　Arabic (native), English (Fluent), German (beginner)