Amgad El Gamal

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Education

McGill University – Montreal, QC **August 2022 - Present**
Bachelors in Software Engineering Co-op *GPA: Upon Request*

Technical Skills

Programming Languages: Python, Java, HTML/CSS, JavaScript, VHDL
Relevant Courses: Digital Logic, Discrete Structures, Data Structures and Algorithms, Object-Oriented-Design (OOD)
Miscellaneous: Machine Learning, Data Analysis & Visualization, Software Design, ElasticSearch, Quartus, Git,
Spoken Languages: English, French, Arabic

Internships & Work Experience

BeauT – Beauty and Tech **August 2023 – Present**
Software Developer (Part-Time) *Montreal, QC*

- Spearheading the development of a robust CMS using **Django** and **React**, optimizing for 1000+ client interactions and data management.
- Collaborating on AI enhancements for BeauT's platform, leveraging **TensorFlow** and **OpenCV** for Python-based facial recognition and image processing.

Ambient Intelligence Lab (AMI-Lab) | Université de Sherbrooke **May 2023 – August 2023**
Data Science Intern *Sherbrooke, QC*

- Advanced a 4-year medication deprescription research, culminating in a pivotal scholarly article.
- Analyzed **300M+ JSON and CSV** datasets using Python's **Pandas** & **NumPy** alongside **MATLAB**, deriving crucial medication-activity metrics.
- Spearheaded data extraction from **ElasticSearch**, optimizing complex queries with **Kibana Query Language (KQL)**.
- Engineered a **real-time algorithm via signal processing** to decode fiber-optic sensor bed mat data.
- Employed **linear regression modeling** in **Python** to analyze heart rate time-series data, visualizing trends and capturing key statistical parameters.
- Deployed **LSTM-based predictive models** within **TensorFlow** and **Keras** frameworks, streamlining physical activity pattern recognition via hyperparameter optimization.

Engineering Projects & Hackathons

***"Jouan"* – Diet-Based Restaurant Locator Chabot | McHacks** **February 2023**

- Built an interactive chatbot to identify user dietary preferences and locate nearby suitable restaurants.
- Used **Python** and **Google Maps API** for backend development and restaurant data retrieval.
- Frontend constructed with **JavaScript**, **CSS**, and **HTML5** for a user-friendly interface.

***"Shazoom"* – Song lyric recognition web app | Hackathon Award Winner** **October 2022**

- Designed a speech-recognition UI that identifies user-sung songs and retrieves top matches.
- Employed **Python** and **Flask** for backend development, **HTML5** for content structuring, and **JavaScript** for dynamic frontend interactions.
- Integrated several **speech-recognition APIs** to cross-verify lyrical inputs, boosting song identification accuracy.

***"Cloudnerd"* – ML-based Weather Forecasting Application | HEP 2022** **June 2022**

- Crafted a **React** and **TypeScript** web app that interprets cloud patterns for weather forecasting.
- Integrated a **TensorFlow** machine learning model trained on extensive climatological data.
- Deployed **Firebase** for backend services, ensuring secure, real-time UI updates.
- Demonstrated strong performance, with an impressive **84% accuracy rate** in weather prediction, underscoring the model's proficiency in analyzing complex meteorological patterns.

Block Game (Java) **April 2023**

- Utilized Quad-Trees, ArrayLists, and Recursive Algorithms for efficient backend development of the Block Game.
- Applied Object-Oriented Design (OOD) principles and built a robust scoring system.
- Conducted Algorithm Complexity Analysis to ensure optimized game performance.