Youssef Emam

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Professional Summary

- **Health Data Professional** with 2+ years in health research and applying programming and statistical methods to complex healthcare datasets.
- **Proficient in machine learning and statistical modeling**, with a strong track record of building robust data analysis pipelines and models in R, Excel and Tableau to visualize complex data sets and extract insights.
- **Strong communication and collaboration skills** honed through strategic partnership development and sales experience.
- **Full-stack developer** and strategic communicator skilled in translating complex technical concepts into scalable solutions using Git/GitHub, Linux, R, Python, SQL, JS, HTML, and CSS.
- **Initiative and innovation-driven professional**, passionate about learning and adept at identifying opportunities to enhance and automate workflows, delivering solutions with lasting impact.

Relevant Experience

Graduate TA – Critical Coding (Python), Web Development | Part-time   Sept 2024 – Present
University of Toronto
- Mentored 80+ students in the fundamentals of programming and web design, including Python, HTML, CSS, Figma, and Adobe XD, by creating support resources and hosting office hours resulting in project readiness.
- Liaised with instructors to critically evaluate the curriculum, ensuring courses maintain industry relevance.
- Promoted test-driven development by creating unit tests and test-cases to assess student work, resulting in higher student code quality and improved problem-solving skills.

Pharmaceutical Partnerships and Business Development | Co-op   Sept 2023 – Jan 2024
Shoppers Drug Mart Corp.
- Communicated with leading pharmaceutical/medical technology firms (Abbvie, Dexcom, GSK) to strategically execute patient support programs (PSPs) at Shoppers Drug Mart, optimizing patient savings and ensuring fulfillment of all contractual obligations.
- Developed a web app leveraging Python, JS, Flask, SQL, HTML and CSS, which integrated NLP and LLMs to summarize and present relevant industry developments, yielding time savings of 7 hours per week.
- Utilized Excel and Power BI to create a comprehensive data analysis and visualization pipeline, which was adopted team wide. This template served as a valuable tool for identifying KPIs and enabled supervisors to effectively showcase the tangible value contributed to the enterprise.
- Led data analysis of insurance co-payment card data while collaborating cross-functionally to identify and correct systemic errors in insurance card setup, leading to significant cost savings for patients, internal teams and manufacturer partners
- Presented project insights and findings to company VPs, enabling data backed strategic decision making.
- Ensured GAAP compliance by auditing invoices in SAP, resulting in an accurate Q3 financial statement.

Research Assistant | Co-op   Jan 2022 – Aug 2022
McMaster Institute for Infectious Disease Research
- Utilized predictive software and mass spectrometry data analysis techniques to characterize unknown compounds from bacterial extracts, leading to the identification of 5 new antimicrobial compounds (Publication Pending).
- Analyzed assay data using statistical methods such as regression and normalization ensuring a robust analysis leading to the identification of potential *M. Tuberculosis* inhibitors.
- Presented findings to technical and non-technical audiences and collaborated to correct issues in analysis methods leading to a more robust analysis.

Sales and Sponsorship Representative | Volunteer   Sept 2022 – Mar 2023
MIST Toronto
- Communicated with sponsors and stakeholders to persuade them to contribute over $20,000 in funding for non-profit events through strategic partnership building and effective communication.
- Collaborated cross-functionally with 9 departments within the organization to ensure successful execution of fundraising events and initiatives, resulting in a ~50% increase in funding year-over-year.
- Organized and executed a multi-channel outreach strategy (market research, cold calls, email, social media) to acquire 10+ financial sponsors.

Projects

Analysis of Clinical Characteristics on Health Outcomes | *(Project Repository 2)*   Jul 2024 – Dec 2024
- Developed machine learning and survival analysis models in R to predict blood transfusion needs in transplant patients, optimizing hospital resource allocation.
- Researched disease areas to contextualize data enabling the successful identification of key clinical features.
- Developed a statistical analysis plan, conducted data preprocessing and wrangling, ensuring the quality and integrity of data used in the models.
- Created functions to streamline the exploratory data analysis (EDA) and aid with the visualization of data summary tables and significant results to a non-technical audience enhancing visibility of findings.
- Communicated findings in written and presentation format, highlighting model insights and their applications in transfusion volume prediction and hospital resource allocation.

Covid-19 Dashboard | *(Dashboard)*   May 2024 – Aug 2024
- Developed a Covid-19 dashboard using R, enabling the visualization of regional case patterns.
- Applied statistical methods (Pearson correlation, ANOVA) to identify key predictors of Covid-19 distribution, enabling data backed public health decision-making.
- Learned and implemented a new R package to add interactive map visualization, enabling users to explore regions of interest independently and enhancing the dashboard's usability.
- Parsed and cleaned data from various sources using table joins and API calls, enabling the correlation analysis of socioeconomic trends and Covid-19 case distribution.
- Collaborated with team members via GitHub, ensuring seamless version control and timely delivery of the project.

Glance EHR | *Personal Project (Click for Demo), (Project Repository)*   Sept 2023 – Dec 2023
- Leveraged Python, Flask, SQL, JavaScript, HTML and CSS to develop a comprehensive medical health record system to allow physicians to record and store patient information, while enabling patients to access their records through a seamless interface.
- Designed and implemented a tool aimed at proactively identifying potential drug interactions. This tool utilizes web scraped drug data from various sources and public APIs to provide real-time warnings to physicians, empowering them to make safer, data-backed prescription decisions.
- Implemented a privacy-centric methodology in the design of the database and pages housing sensitive patient information. Ensured robust measures to safeguard patient data and uphold privacy standards.

Education

University of Toronto   Sept 2019 – Apr 2024
MBiotech Candidate, Digital Health Technology Specialization

McMaster University   Sept 2019 – Apr 2024
Bachelor of Science in Biochemistry, Biomedical Research Co-op Specialization