Michael Halim

Data Scientist · Data Analyst · Chemical Engineering Graduate

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Skills

Languages	Python, SQL, MATLAB
Data Science	Numpy, Pandas, SciPy, Scikit-Learn, Statsmodels, Keras, Tensorflow, NLTK, Beautiful Soup, Selenium, Excel
Data Visualization	Matplotlib, Seaborn, Plotly, Tableau
Development Tools	HTML, CSS, Flask, Streamlit, AWS, Docker, Git, Bash Scripting

Data Science Projects

GiftFinder

Github Link

Web-app that recommends the perfect gift based on a recipient's Twitter profile — *August, 2021*

- Trained a linear support vector classifier to predict between gift categories using Reddit data and achieved 85% accuracy on test data
- Developed a pipeline to clean and filter Tweets using tools like Regex, NLTK, and sentiment analysis to feed as input to classifier
- Scraped Amazon product pages using Beautiful Soup and stored data in SQLite database to create a content recommender system
- Deployed pipeline using Streamlit and evaluated final product using a public survey, which showed model had a 90% top-3 accuracy

Flight Delay Predictor

Github Link

A machine learning pipeline that predicts flight delays in January, 2020 — *June, 2021*

- Utilized SQL to query information on 1 million historical US flights from Postgres database and used libraries, like Pandas and Seaborn, to perform exploratory data analysis and feature engineering
- Trained a random forest classifier and gradient boosting regressor to predict type and duration of delay and tuned hyperparameters using GridSearchCV - final pipeline achieved 60% accuracy on unseen data

Work Experience

Aspect Biosystems

Vancouver, BC

BIOMATERIAL RESEARCH INTERN — *May, 2020 - August, 2020*

- Developed techniques for the synthesis of alginate-based bio-inks with improved mechanical properties and biocompatibility for more efficacious tissue therapeutics
- Utilized Python to model the compressive and tensile strength of fibres constructed using microfluidic 3D-printing technology
- Discovered that formulated bio-ink was able to increase tensile strength by 35% compared to controls; presented findings in reports

École Polytechnique Fédérale de Lausanne

Lausanne, Switzerland

IMMUNOENGINEERING RESEARCH INTERN - LABORATORY OF BIOMATERIALS FOR IMMUNOENGINEERING — *March, 2019 - August, 2019*

- Led an independent study to investigate the effects of micro-particle hydrophobicity on immune response, resulting in a novel in vitro platform capable of reducing T-cell proliferation time by 20% compared to controls
- Designed experimental protocol for material synthesis, antibody-conjugation, and T-cell expansion studies using techniques like flow cytometry and cell-culture
- Utilized Excel and FlowJo to characterize particle hydrophobicity and cell population and presented findings in lab presentations

University Health Network, Princess Margaret Cancer Centre

Toronto, ON

NANOMEDICINE RESEARCH INTERN - ZHENG LAB FOR MOLECULAR IMAGING AND NANOMEDICINE — *September, 2018 - February, 2019*

- Collected biological data and used MATLAB to model the pharmacokinetic and toxicology profiles of a novel porphyrin-lipid nanomedicine in preclinical models to facilitate its clinical translation
- Developed a novel protocol to load biomolecules in porphyrin-lipid nanovesicles, achieving encapsulation efficiencies of up to 80%
- Research culminated in two poster presentations at research conferences and one second-author publication at a reputable journal

Education

Lighthouse Labs

Vancouver, BC

Diploma in Data Science — *May, 2021 - August, 2021*

- Topics: Machine Learning, Deep Learning, Computer Vision, Natural Language Processing, Time Series, Recommender Engines

The University of British Columbia

Vancouver, BC

Bachelor of Applied Science in Chemical and Biological Engineering, With Distinction (CGPA: 86%) — *September, 2016 - May, 2021*

- Courses: Calculus, Linear Algebra, Statistics, Chemical Separations, Reactor Design, Process Modeling, Computational Methods
- Awards: Leonard Staley Scholarship (2020), Go Global Research Abroad Award (2019), Outstanding International Student Award (2016)
- Activities: STEM Instructor at *Geering Up! STEM Outreach*, Biomedical Engineering Student Team, COVID-19 Design Challenge