

# SEJAL DUA

Tufts University Class of 2021  
Data Science & Biomedical Engineering

## WORK EXPERIENCE

### IBM Research

#### Machine Learning Research Intern

Jun 2020 - Sep 2020, Yorktown Heights, NY

- ❖ Engineered primary NLP classification model for IBM Drug Repurposing for Cancer pipeline by performing scientific document corpus filtering through heuristic rules and statistic modeling.
- ❖ Infused domain expertise into Snorkel binary classifier and achieved 83% accuracy when applying the model on 127,000 unlabeled PubMed articles and a validation set of 1,400 labeled articles.

### Textbook Exchange Network

#### Director of Data Analytics

Jan 2019 - Present, Medford, MA

- ❖ Gathered data-driven insights from 6000+ API exchanges representing textbook transactions that have saved students \$500,000 compared to campus bookstore prices.
- ❖ Calculated Key Performance Indicators (KPIs) via SQL queries and Python statistical methods to measure the health and wealth of the organization and market estimated impact on [website](#).
- ❖ Managed a team of computer science students through numerous cycles of exploratory data analysis, integration, visualization, and presentation at monthly showcases.

### LEGO Education Engineering Lab

#### Software Development Intern

Jun 2019 - Aug 2019, Boston, MA

- ❖ Developed a Python software package which enables bidirectional communication between a LEGO SPIKE Prime hub and various microprocessors, thus making it compatible with existing products.
- ❖ Improved LEGO image recognition functionality by implementing a smile detection neural network demonstration using the sklearn package.

### Oregon Center for Aging & Technology

#### Software Engineering Intern

May 2018 - Aug 2018, Portland, OR

- ❖ Facilitated and executed a research validation experiment designed to obtain gait speed data from an elderly cohort of participants with Alzheimer's or dementia; engineered laser trip beams and 3D-printed sensor enclosures for passive infrared sensing virtual hallway.
- ❖ Wrangled and visualized 20 years of passive infrared sensing data, investigating the gradual degradation of the circadian rhythm as a result of aging.

### Tufts University Computer Science Department

#### Teaching Fellow

Jan 2019 - Present, Medford, MA

- ❖ Hosted office hours, facilitated labs, and improved grading infrastructure for 120+ person classes; Served as liaison between professor and 30+ person teaching staff.

## CO-CURRICULARS

### Tufts Women in Technology Conference

#### Speaker Coordinator

Apr 2020 - Present

Networked with women in executive positions at top tier tech companies; Recruited 8 speakers to inspire and empower college students at virtual women in technology conference.

### Towards Data Science

#### Freelance Data Journalist

Nov 2019 - Present

Performed sentiment analysis on song lyrics using the Spotify API, Python, and Tableau; Wrote 6 Medium articles reaching over 26K readers in the data journalism space.

## HACKATHONS

### TechTogether 2020

#### Awards: IBM Best Hack & Dell Technologies Best Hack

Jan 2020

Built an NLP-powered, user-facing annotation tool that sifts through abstracts from therapeutic cancer intervention studies and identifies the drug type, cancer type, therapeutic association, and study type.

### URx InternHacks

#### Award: Best Technical Problem

Jun 2020 - Jul 2020

Integrated a Flask web application that facilitates intellectual conversation between users with a K-Means Clustering algorithm, to help mitigate social media echo chambers.

## CONTACT



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sejaldua



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## EDUCATION

### Tufts University (Medford, MA)

GPA: 3.77 Dean's List

Graduation: May 2021 (expected)

### Jesuit High School (Portland, OR)

GPA: 4.26 weighted, 3.96 unweighted

Graduation: June 2017

## RELEVANT COURSES

- Data Structures
- Algorithms
- Machine Learning
- Data Visualization
- Neural Networks and Deep Learning
- Big Data
- Artificial Intelligence
- Cybersecurity

## TECHNICAL SKILLS

### Coding Languages

Python, C, C++, Java, R, SQL, HTML, CSS, Javascript, PHP, Matlab, Bash

### Frameworks & Technologies

React, Node.js, Flask, Tableau, MongoDB, Postgres, AWS, Docker, Makefile, Git

### Packages & Libraries

matplotlib, numpy, scipy, spacy, pandas, sklearn, D3, Keras, Tensorflow, PyTorch, Snorkel

### Productivity Tools

VSCode, Jupyter Notebooks, Xcode, LaTeX, Microsoft Office Suite, Trello

### Microprocessors & Fabrication

Raspberry Pi, Arduino, micro:bit, OpenMV Camera, PyBoard, SolidWorks, 3D Printing, Laser Cutting

## INTERESTS

Fitness Tech, Mandarin Chinese, Sports Analytics, Music, Sushi Connoisseur, Travel, Netflix Documentaries, Yoga & Meditation