

# Krutheeka Rajkumar, BS, MEng

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**Final year Engineering Graduate student seeking full-time employment post-graduation in June 2020.**

## EDUCATION

### UNIVERSITY OF TORONTO

Master of Engineering – Emphasis on Analytics  
Department of Mechanical and Industrial Engineering

**Toronto, Ontario**

Aug 2018- Present  
Engr GPA: 3.94/4.0

### COLORADO STATE UNIVERSITY

Bachelor of Science  
Major: Engineering Science – Space Engineering Concentration  
Minor: Mathematics

**Fort Collins, Colorado**

Sept 2013- May 2017  
Engr GPA: 3.19/4.0

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## TECHNICAL ASSETS & INTERESTS

- **Cloud:** AWS Elastic Beanstalk
- **Software Languages:** Python, C, C++, Java
- **Web Development:** Django, HTML, JSON, CSS JavaScript, bootstrap, MySQL, Oracle, JQuery.
- **Version controlling system:** Git, Github
- **Coding platforms/IDEs:** Jupyter notebook, sublime text, cognitive labs, Eclipse.
- **Machine Learning libraries:** NumPy, SciPy, pandas, Matplotlib, Sci-kit Learn, Seaborn, BeautifulSoup
- **Big Data (Hadoop):** HDFS, pig, spark, yarn, mapReduce, ambari
- **Financial Engineering:** RRN, Keras functional API, LSTM, time-series problems
- **Machine Learning Concepts:** data mining, data cleaning, Linear regression, Logistic regression, clustering, decision trees, neural nets, classification, feature engineering, SVM, non-linear programming, Artificial Neural network, time-series algorithm.
- **Mechanical/electrical engineering systems:** Arduino Duo, CNC, machine shop (lathe, bandsaws, drill press), Ansys CFD, SolidWorks CAD modeling, CREO parametric modeling.
- **Communication Languages:** English (native), Hindi and Tamil (fluent)

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## EXPERIENCE

### CO-FOUNDER AND PRIMARY PROGRAMMER - TRAY SOLUTIONS Inc.

May 2019 – Present

#### Front and Back End Developer [Hatchery – University of Toronto]

- Website: <https://entray.ca>
- Mobile website designed and created for multi-vendor restaurant marketplace using dine-in services
- Website created using Django framework and deployed through AWS
- External payment gateway (Stripe) implemented for online mobile payment with over 100 transactions successfully conducted through the website
- Two successful pilot tests completed at restaurants and three restaurants fully integrated with Tray
- Project evaluated on product quality, customer traction, pitch deck presentation, and business model development

### DATA STRUCTURES TEACHING ASSISTANT

Jan 2019 – April 2019

#### Teaching Assistant and Lab Coordinator [University of Toronto]

- Lab teaching assistant in data modeling, MySQL DBMS, OLAP queries, and DB application with JDBC

### WEB DEVELOPER - VICTORIA UNIVERSITY

Sept 2018 – May 2019

#### Front and Back End Developer [E.J. Pratt Library]

- Maintained the EJ Pratt library website, front end development, implementing search systems and database maintenance

### INTERN - KING ABDULLAH UNIVERSITY OF SCIENCE AND TECHNOLOGY

June 2017 – Dec 2017

#### Soft Robot Programming [Integrated Nanotechnology Lab - Dr. Muhammad Mustafa Hussain]

- In charge of designing and constructing a heart sleeve that would be capable of actuating heart muscles to help with ventricular blood circulation to assist patients who suffer from cardiomyopathy
- Constructed a soft robot that would actuate upon an electrical stimulus. After the testing and configuration of this robot was undertaken a final report was presented to the university.

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## BOEING 3D PRINTED ATTENUATOR PROJECT - COLORADO STATE UNIVERSITY

Aug 2016- May 2017

### Senior Engineering Design Project [Motor Engineering Research Centre – Dr. Donald W. Radford]

- Designed and analyzed the dual gantry system on a 3D printer capable of printing PEEK thermoplastics
- Created the CAD model of the printer and used this to conduct mechanical and heat analyses
- Showed proof of concept on lightweight, heavy-duty 3D printed alternatives for attenuators that line the inner walls of airplane turbines

## TEAM MEMBER - COLORADO STATE UNIVERSITY

Jan 2016 – May 2016

### [Mechatronics Lab]

- Constructed an interactive punching bag for the Mechatronics Project
- Led the electronic and mechanical integration of the project
- Programmed IR sensors, actuator integrations, SD cards, and microcontrollers

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## DATA SCIENCE PROJECTS

### NLP Analysis

- Analyzed sentiments using NLTK libraries to study reviews of hotels from Trip Advisor and report on specific characteristics of a hotel that were positive or negatively rated. All hotels in the city were compared with each other based on a rating scale and visualized using seaborn plots.
- Analyzed tweets of airline travelers to quantify emotions felt by passengers towards any particular airline company in order to understand reasons for grievances towards the airline and created a regression model to summarize all the possible criteria for an airline's negative reputation.

### KAGGLE Survey Analysis

- Cleaned survey results and analyzed correlation between different features and salaries, trained various machine learning models to predict future trends and correlations between a person's qualification and average salaries.

### MovieLens - Recommender System

- Implemented a collaborative recommendation system to study user-user and item-item similarity to recommend movies to people based on 100,000 movie ratings from 943 users and a selection of 1,682 movies.

### 20 News Groups - Classification of Large Data Sets

- Analyzed 20,000 newspaper articles and categorized them into specific groups based on content of articles, cross-validating the results based on different parameters such as number of features, hyperparameter tuning, etc.

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## EXTRACURRICULAR ACTIVITIES

### Financial Director, AMIGAS (Association of Mechanical and Industrial Graduate Students)

May 2019 – Present

- Maintained financial records, planned annual budget, applied for funding, and oversaw/managed all financial transactions

### Member, ISA (Indian Students Association)

Sept 2013 – May 2017

- Event manager and emcee for India Nite 2013-2015
- Involved in the organizing, coordinating, and marketing of Indian Events (Diwali night, Holi, World Unity Fair, and India Nite) around CSU.

### Volunteer, CSU Chemistry Club

Sept 2013 – May

2017

- Participated in setting up and conducting STEM projects
- Worked on community outreach programs in order to promote STEM programs among high school students.