

# Mustafa Muhammad

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## Technical Skills

- Languages: C, C++, Java, Python, R, Javascript, HTML/CSS
- Tools: ReactJS, MongoDB, NodeJS, ExpressJS, Numpy, Pygame, Git, SolidWorks, Heroku, Firebase

## Work Experience

### **RWTH-Aachen University – Researcher (May 2020 – Aug 2020)**

- Researched applications of support vector machines and naïve Bayes classifiers for the purpose of automatically detecting fake news
- Used proprietary NLP engine to convert sentences into multi-dimensional vectors
- Achieved fake news detection accuracy of 67.48%
  - Built classifiers using the caret package in R
  - Utilized scikit learn to distinguish the most useful features, decreasing training time
- Leveraged Python Seaborn and R ggplot2 to visualize and present data

### **Ape Apparel – Co Owner (Oct 2017 – Apr 2018)**

- Created T-Shirt printing company under the guidance of the Junior Achievement Program
- Ensured employee satisfaction by conducting bi-weekly interviews with each member of the team
- Utilized strong interpersonal and communication skills to resolve conflicts between team members
- Achieved 230% return on investment after 18 weeks

## Projects

### **Fortuna – MongoDB, ExpressJS, React, NodeJS, Heroku, Firebase**

- Programmed and designed a MERN stack application to analyze spending habits
- Leveraged RESTful API to connect frontend and backend
- Utilized hooks and context within React to simplify information transfer
- Deployed backend using Heroku and frontend using Firebase

### **Neural Net – Python, NumPy**

- Leveraged NumPy to develop neural network library that supports networks of arbitrary dimensions
- Utilized techniques from linear algebra and multi-variable calculus to implement back propagation algorithm with stochastic gradient descent

### **Sorting Algorithm Visualizer – Python, Pygame**

- Leveraged Pygame to visualize 5 popular sorting algorithms
- Created interactive menu to set various parameters for sorting algorithms

## Clubs/Volunteering

### **U of C League of Legends Club – Executive (Sept 2019 - Current)**

- Organized bi-weekly meetings to plan and execute online and in person events
- Provided live commentary and analysis for multiple 6 hour online tournaments with over 60 participants
- Coordinated sponsorship opportunities with companies like Red-bull

## Education

University of Calgary – Bachelor of Science in Software Engineering 2023

- Jason Lang Scholarship 2019, 2020