

# KARTIKE CHAURASIA

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## EDUCATION

**University at Buffalo, The State University of New York**

**Anticipated May 2024**

Bachelor of Science in Computer Science Minor in Mathematics

**GPA: 3.83/4.00**

- Tau Beta Pi - Engineering Honors Society
- David M. Benenson Memorial Scholarship
- 2022 Leaders in Excellence Award
- 2023 Innovative Student Leader Award

## WORK EXPERIENCE

**Head Teaching Assistant (Data Structures & Algorithms), University at Buffalo**

**August 2022 – Present**

- Conduct reviews weekly, **debugging and troubleshooting** assistance in **Scala and Java** for almost 40 students
- Architected and re-engineered programming assignments from **Scala to Java**, and authored **data structures and algorithms programming assignment documentation**, ensuring clarity of instructions and curriculum's relevance and accessibility
- Developed an automated test system using **Python and Java**, which streamlined the evaluation process programming assignments, utilized **JSON** for test result storage, and integrated **Makefile** for build automation

**Full Stack Web Developer (NEXT-LEVEL Leadership Conference), University at Buffalo**

**August 2022 – Present**

- Engineer a **Python based TCP Handler** and **MongoDB database**, while also developing an **ADA-compliant HTML and CSS using JavaScript and Sass for CSS**, applying disciplined software development principles and **Agile methodologies**
- Automate team point allocation through dynamic **login and registration system**, upon successful task completion
- Leverage **AJAX Polling** to create a live, real-time scoreboard, reducing **workload by up to 90% compared to the prior conference**, initially joined as a volunteer and but transitioned to a part-time role based on performance and contributions

**Software Engineering Intern, Qarik Group**

**June 2022 – August 2022**

- Engineered Genesis UI's **UI/UX**, a **Docker based framework** using BOSH for simplified multi-cloud deployment
- Worked within a team of 4 to streamline the **deployment, scaling, and upgrading of systems** like Cloud Foundry across multiple **CI/CD pipelines** enhancing **the security and efficiency of web application components**
- Developed backend APIs in **Golang** using **Gin web framework** to store, update deployments in **PostgreSQL** database container, adding functionalities using **ReactJS** and implemented deployment data integration using **GitHub API**

## PROJECTS

**Stock Predictor, [Github Link](#)**

**June 2023**

- Implemented a **Random Forest Regressor model** and utilized the **yfinance library** for data from **Yahoo Finance API**
- Optimized the Random Forest model using **GridSearchCV** for **hyperparameter tuning**, identifying the best parameters from given ranges for the **number of estimators, maximum features, minimum samples split, and bootstrap option**
- The model achieved a **Mean Absolute error of 0.975, Mean Squared Error of 1.763, and a Root Mean Squared Error of 1.328**, indicating a relatively **accurate performance** in predicting the stock closing prices

**Handwritten Digit Classifier, [Github Link](#)**

**March 2023**

- Developed a **Convolutional Neural Network (CNN)** in **PyTorch** to classify handwritten digits from the **MNIST dataset**, attaining an **accuracy of 99%** on the validation set
- Implemented **data augmentation, including random rotation**, to enhance model robustness and ability to generalize from training to unseen data
- Integrated a **Generative Adversarial Network (Generative AI Modelling)** to generate synthetic handwritten digits, further enhancing robustness, the generated digits were used in training cycles, contributing to the model's high accuracy

**UBay E-commerce Website for University at Buffalo, [Github Link](#)**

**December 2022**

- Led a team of 4 to develop an eCommerce platform for University at Buffalo stakeholders using **ReactJS, FastAPI Python based framework, Sass for CSS, and PostgreSQL for the database using Agile development techniques**
- Designed a secure user account authorization system employing **bcrypt** library and implemented session cookies
- Devised an auction feature **using WebSockets** with real-time bid tracking for the highest bidder when an auction end

## SKILLS

**Technical:** Java, Scala, JavaScript, Python, C, Go, HTML, CSS, ReactJS, MongoDB, MySQL, PostgreSQL, SQL, Git, Docker, TCP/IP, jQuery, Bootstrap, RESTful API, SASS, AJAX, Flask, FastAPI, Gin, Kubernetes, Node.js, NumPy, TensorFlow, Pandas, Unix, Linux

**Computer Science Concepts:** Computer Vision, Machine Learning, Distributed Systems, Software Engineering, Web Development, Web Technologies, Algorithms, Data Structures, Systems Programming, Object-Oriented Programming, Networking

## LEADERSHIP EXPERIENCE

**Student Engagement Ambassador, University at Buffalo**

**August 2021 – August 2023**

- Advise and mentor **12 - 20 students per semester** to help increase campus engagement and foster development

**Resident Advisor, University at Buffalo**

**August 2022 – Present**

- Oversee administrative tasks including budgeting, incident reports, and resident check-ins for a **dormitory of 200+ students**