

# KARTIKE CHAURASIA

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## EDUCATION

### University at Buffalo

Bachelor of Science in Computer Science Minor in Mathematics

May 2024  
GPA: 3.84/4.00

- 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 – May 2024

- Provided **debugging and troubleshooting** assistance in **Scala and Java**, integrating **unit testing** to enhance understanding
- 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 testing system with Python and Java**, streamlining the programming assignments evaluation process for over **400 students** and employing **JSON for test result storage** along with **Makefile** for build automation

### Full Stack Web Developer - NEXT-LEVEL Leadership Conference | University at Buffalo

August 2022 – February 2024

- Developed a **Python-based TCP Handler** (backend) for managing incoming requests and **TCP Packets** with **MongoDB** integration, creating **ADA-compliant** web interfaces using **HTML, CSS, and JavaScript**, employing **Agile** methodologies
- Reengineered the entire backend system to **Flask**, facilitating a smoother transition of **version control** codebase management to a sophomore colleague, **significantly streamlining the process for future development efforts** using
- Automated team point allocation through **login and registration system**, upon successful task completion for **100+ users**
- Leveraged **AJAX Polling** to create a live 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 for live deployments** 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
- 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**
- 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, Node.js, NumPy, TensorFlow, Pandas, Unix, Linux, Unit Testing

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

## LEADERSHIP EXPERIENCE

### Resident Advisor | University at Buffalo

August 2022 – May 2024

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

### Student Engagement Ambassador | University at Buffalo

August 2021 – August 2023

- Advised and mentored **12 - 20 students per semester** to help increase campus engagement and foster development