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, Artificial Intelligence, Distributed Systems, Software Engineering, Web Development, Algorithms, Data Structures, Systems Engineering, 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**