Utkarsh Bansal

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EDUCATION

- **University at Buffalo, The State University at New York** — Buffalo, NY
  Master of Science - Computer Science and Engineering; GPA: 4.0 — *Aug 2021 - Present*
  Courses: Operating Systems, Robotics Algorithms, Machine Learning
- **Ambala College of Engineering and Applied Research** — Ambala, India
  Bachelors in Technology - Computer Science and Engineering; Percentage: 85.2% — *Aug 2017 - Jul 2021*

SKILLS SUMMARY

- **Computer Languages** — Python, C++, JavaScript, C, Java, SQL.
- **Software & Libraries** — React, Node.js, MongoDB, ROS, Scikit-learn, NumPy, Pandas, Postman.
- **Courses & Certifications** — Front-end Web Development with React and Bootstrap, Machine Learning, Data Science, Programming in C, Database Management Systems.

COURSE PROJECTS

- **Robotics Algorithms** — Fall 2021
  - Worked with ROS, tf, and stage to implement planning algorithms such as Bug2 and A*.
  - Implemented perception system using RANSAC algorithm for wall detection.
  - Worked on feature matching in images using Harris Corner Detection and RANSAC.
- **Operating Systems** — Fall 2021
  - Implemented priority scheduling and MLFQ scheduling among threads.
  - Worked on alarm clock functionality which enabled the threads to sleep without busy waiting.
  - Worked on process initialization and setup of user level processes.
- **Machine Learning** — Fall 2021
  - Implemented LDA, QDA, linear regression, ridge regression, logistic regression, CNNs and SVMs using NumPy and Scikit learn libraries on the MNIST dataset for digit classification.

WORK EXPERIENCE

- **VA Software Solutions, Intern** — May 2020
  - Created training material on using Postman to build and test Web APIs.
- **Entrepreneurship Promotion and Incubation Council, UI Design Intern** — Dec 2019 - Jan 2020
  - Designed the UI for a smartphone app to measure temperature of hot metals using the camera.
- **VA Software Solutions, Intern** — Jul 2019 - Aug 2019
  - Created documentation on Web API best practices and authentication techniques (OAuth 2.0).

PERSONAL PROJECTS

- **Printing Job Management System** — Feb 2021 - May 2021
  - A MERN application designed for Rupa Packaging Industries to digitalize job management operations.
  - User can view, add, update jobs and track the steps (designing, printing etc.) needed for a job's completion.
- **Data Structures and Algorithm Visualizer** 🌐 — Sep 2020 - Dec 2020
  - Visualized stack and queue data structures as well as BFS and DFS graph traversal algorithms using React and Bootstrap to assist remote learning during the pandemic.
- **Personal Travelogue Website** 🌐 — Aug 2020 - Sep 2020
  - Travel blog built using Bootstrap and React libraries.

VOLUNTEER EXPERIENCE

- **Sneh Sparsh- A free home care service for terminally ill cancer patients** — Jun 2017 - Jul 2021
  - Conducted seminars on importance of early detection of cancer in schools and colleges.
  - Served as driver to the home care service team by driving them to patients' houses.
- **Indian Delegate, Discover Qatar in 144 Hours** 🌐 — Sep 2019
  - A part of Indian delegation to Qatar for an educational program organized by Qatar Youth Hostels.