Muskan Gupta

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EDUCATION

Cornell University **Expected: June 2028**
B.S. Computer Science *Ithaca, NY*
Minors: Artificial Intelligence, Information Science
- **Relevant Courses:** Data Structures, Discrete Math, Foundations of AI (in progress), Algorithms (in progress)

SKILLS

- Python, Java, OCaml, C++, React, HTML/CSS, MATLAB, SQL, Machine Learning Fundamentals
- Teamwork, Growth Mindset, Problem Solving, Adaptability, Communication, Initiative

WORK EXPERIENCE

Engineering World Health *Software Subteam Member* **September 2025 – Present**
- Developing a curriculum website using React and SQL to centralize and streamline access to educational materials on medical technology for global learners
- Collaborating with a team to design and implement user-friendly features that improve accessibility and learning outcomes
- Applying software engineering skills to build a platform that supports EWH's mission of advancing healthcare education in resource-limited communities

CytoHub Inc. *Machine Learning Intern* **June 2025 – August 2025**
- Built XGBoost ensemble models to predict organoid yield from time-series contraction data; improved performance through data augmentation and tuning
- Developed a full ML pipeline: automated preprocessing, prediction generation, and alert system for low-yield detection
- Leveraged AWS EC2 to deploy Jupyter notebooks; managed file transfers and large biological datasets
- Collaborated with engineers, product managers, and researchers to define requirements, integrate existing tools, and adapt to evolving project goals. Communicated findings to various teams through documentation and presentations
- Used MATLAB to visualize and analyze lab data provided by researchers

CU Solar Boat *Drivetrain & Systems Control Subteams Member* **Feb 2025 - August 2025**
- Designed and integrated drivetrain and electrical subsystems for a solar-powered racing boat, including motor selection, gearing, and wiring layouts
- Conducted CAD modeling, system optimization, and tradeoff analysis to improve energy efficiency and performance
- Tested and troubleshooted to ensure drivetrain reliability and seamless electrical-mechanical integration for competition

SOFTWARE PROJECTS

Organoid Arrhythmia Prediction ML Model - *Python, XGBoost, Pandas, SciPy, scikit-learn, TensorFlow, Matplotlib, PyTorch, AWS EC2*
- Built a machine learning model to predict arrhythmia probability in cardiac organoids using contraction pattern data
- Extracted RR interval features from ECG data and trained an XGBoost classifier with multiple evaluation metrics
- Applied 2D arrays and graphs to organize data, and used linear search to find specific values

Space Shooter Video Game - *Java*
- Designed and implemented a 2D arcade-style game with rockets, aliens, and asteroids
- Programmed player movement, projectile mechanics, collision detection, and scoring system
- Used object-oriented design to manage game entities and logic modularly

WICC x Millennium Market Sentiment & Financial Analysis Project
- Leading a multi-phase analytics project analyzing relationships between public sentiment and Disney stock behavior
- Coordinating data collection, NLP analysis, and visualization workflows to deliver clear insights
- Evaluating tradeoffs in analytical approaches and proposing next-step improvements

Clocktower Minigames Platform - *OCaml*
- Led execution of a multi-feature software project, managing task distribution across a cross-functional student team
- Coordinated timelines, milestones, and deliverables while maintaining regular communication with an assigned TA to track deadlines and expectations
- Facilitated conflict resolution and alignment when technical or scope disagreements arose, keeping the project on schedule
- Contributed to system design and implementation of modular minigames within a shared codebase

LEADERSHIP

Cornell Club Table Tennis - *Athlete & Co-President* **December 2025 – Present**
Women In Computing at Cornell - *Co-Treasurer* **August 2025 – Present**