Arnav Garg

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Education

New York University May 2026
Bachelor of Science, Mathematics and Physics; Minor in Computer Science (GPA: 3.92 / 4.00) *New York, NY*
- *Relevant Coursework:* Software Engineering for Scientific Computing, Data Structures and Algorithms, Linear Algebra and Differential Equations, Mathematical Methods for Physics and Engineering, Probability and Statistics, Numerical/Data Analysis, Artificial Intelligence & Machine Learning

Experience

Georgia Institute of Technology, Research Experience for Undergraduates May 2024 – Jul 2024
Applied Mathematics REU Researcher *Atlanta, GA*
- Modeled the nonlinear dynamics of vibroimpact systems of coupled energy harvesters using numerical and analytical methods with MATLAB and Mathematica
- Applied dynamical systems theory and physics concepts to analyze system behaviors and improve energy harvesting output by 50%
- Enhancing presentation and communication skills through designing and presenting a culminating scientific poster

NYU Self Drive Sep 2023 – Dec 2023
Software Developer *Brooklyn, NY*
- Enhanced software using Robot Operating System (ROS) for the research and development of an autonomous driving educational project with Turtlebot
- Simulated Turtlebot movement and interaction with a real-world maze using the SLAM mapping algorithm

NYU Tandon AI4CE Lab Jun 2023 – Aug 2023
Undergraduate Research Assistant *Brooklyn, NY*
- "Energy-Aware Computer Vision": Deep learning models in Python using computer vision to perform detection and counting in videos of large crowds of 100+ people
- Collected and preprocessed live video feed data from 5 locations to apply the models to

NYU Sixth Sense Sep 2022 – May 2023
Undergraduate Researcher *Brooklyn, NY*
- Optimized actuator efficiency and functionality in a smart wearable belt for visually impaired users by researching and experimenting with pulse-width modulation techniques
- Enhanced *Commute Booster* navigation app by improving visual experience and accessibility using Figma design features

Projects

PAQ-MAN | *Qiskit, Python* Oct 2023
- Collaborated with a multidisciplinary team in the NYU Tandon Haqathon to tackle sustainability issues in bin-packing and route efficiency for package deliveries
- Implemented quantum algorithms such as Quantum Approximate Optimization Algorithm (QAOA) to solve the classical bin-packing problem

RGBtoI | *Python, YOLO, Mermaid, Sphinx* May 2023
- Developed a toolkit that allows users to easily process their RGB images/videos using YOLO computer-vision models and obtain either bounding boxes or intensity maps as output or both.
- Designed UML diagrams using Mermaid and wrote comprehensize documentation using Sphinx

Technical Skills

Languages: Python, Java, C++, MATLAB, SQL, R
Tools: Git/Github, Bash
Frameworks: PyTorch, TensorFlow, Qiskit

Awards & Certifications

Artificial Intelligence/Machine Learning Specialization Jun 2023
Certified Quantum Computing Associate using Qiskit Aug 2023
Eagle Scout Jun 2022