Mehul Goel

Carnegie Mellon Undergraduate Student

Sharp-eyed, motivated, and hard-working college student attending the top university for CS. Worked on previous machine learning research, student leader, and great people skills for working in large teams.

WORK EXPERIENCE

Technical Consultant **OCT 2022 – FEB 2023**

AI Silica, Santa Clara, CA

- Working as a paid consultant with an offshore team to continue the development of silicon for machine learning
- Learned about the specifics and became very familiar with models including ResNet50, BERT, GPT
- Developed a performance model to accurately test any given chip configuration within 5% of real-life performance with standard AI Benchmarks (ResNet50, BERT, GPT)
- Created efficient load balancing method to improve layer distribution within the model, projecting an increase of up to 30% in performance that was not previously seen

ML Performance Chip Architect Intern **APR 2022 – SEP 2022**

D-Matrix, Santa Clara, CA d-matrix.ai

- D-Matrix is creating an ML Hardware accelerator to improve training time in large supercomputers
- Built chip modeling software to test the AI Hardware Engine.
- Cut existing solution's modeling time by 50%, using efficient improvements in external frameworks like Google OR Tools
- Created an algorithm to map tasks to resources efficiently. Improved resource utilization by 46% using a weighted round-robin load balancing method.
- Built 50% of the Speed of Light Model Database and created secondary high-level modeling performance.

Founder & CEO **NOV 2021 – PRESENT**

RBotComp, San Jose, CA rbotcomp.org

- Non-Profit Tutoring Organization focused on teaching robotics for free across the United States and India.
- In the first year, improved student count from 0 to 50, using social media and physical marketing campaigns.
- Collaborated with middle schools to host after-school programs and raised community awareness through radio appearances
- Created a referral program to bring steady word of mouth growth (20% increase/class) yearly
- Raised over $2,500 dollars through various community appearances

CONTACT

- San Jose, CA
- +1.408.691.4394
- mehulg@andrew.cmu.edu
- linkedin.com/in/mehulgoel873
- github.com/mehulgoel873

AWARDS & HONORS

2nd Place — 2021
USA World Robotics Nationals
Represented internationally in Hungary

2nd Place — 2021
DECA International Conference
Virtual Business Competition

Semifinalist — 2022
National Merit Scholarship

4th at States - 2022
Science Olympiad

Silver Rank - 2022
USA Computer Olympiad

Bronze Medal - 2021
Presidential Volunteer Service Award

EDUCATION

Carnegie Mellon Univ.
Undergraduate Student
2023-2027
Attending School of Computer Science with Machine Learning Concentrations

Lynbrook High School
High School Valedictorian
June 2023
GPA: 4.0; 11 AP Tests;
Part of Robotics, Science Olympiad, DECA, CS, Web Dev Club

UC Berkeley
Summer of 2022
- CS 61A: Structure of Computer Programs
- MATH N54: Linear Algebra and Differential Equations
Graduated with a 4.0 GPA

PROJECTS

Biorobotics Lab Intern **AUG 2023 – PRESENT**

- Joined MattLab, working on a machine learning and computer vision project to analyze e-waste and improve recycling.
- Working directly with Apple to improve the image recognition of the differing iphone models
- Developing a better model for the learned computer vision algorithm to make it more accurate

MBR Sim Co-Author **SEP 2022 – FEB 2023**

- Published workshop research paper to present in AAAI (Association for Advancement of Artificial Intelligence) in 2023, Washington DC
- Building universal modeling software for silicon to test against various ML Workloads (ResNet50, BERT, etc.)
- Models accuracy of Google TPU and other silicon within 5% of actual measurements.

EMonitor **JUN 2022 – AUG 2022**

github.com/mehulgoel873/EMONITOR

- Application focused on improving user emotional and mental health within digital world
- Developed familiarity with computer vision, Open CV, and tensorflow.
- Used Facial Emotional Recognition (FER) and other machine learning models to detect emotions and track using webcam
- Qualified for Uber Global Hackathon 2022
- Became familiar with Electron JS, stored data in Python and SQL

Ride-Sharing Routing Improvement **SEP 2021 – APR 2022**

github.com/mehulgoel873/SynopsysSF2122

- Entered project into regional Science Fair
- Collaborated with people at MIT to develop project
- Impact: Proposed decrease of fuel consumption by 90% and simulation time by 300%
- Built off public tool from Google (Google OR-Tools), improving the current routing of vehicles by clustering large data hotspots together

ACTIVITIES

Robo Buggy - Member **AUG 2023 – PRESENT**

- Creating software simulation to model a buggy that is fully autonomous to drive safely
- Working with Docker and Foxglove to build the simulation, including inter-device communication for passing.
- Familiar with ROS, Python, and creating docker environments.

HACKS @ CMU - Competitor **SEP 2023 – PRESENT**

- Current competitor in CMU hackathon.
- Project idea is creating an eco-friendly solution to garbage sorting using machine learning and opencv.
- Building a 3d prototype of new-age garbage bins that can automatically sort between trash and recycling.

SKILLS

Techniques:

- Machine Learning/AI
- Computervision
- Web App Development
- Web Server Creation

Software Tools and Frameworks:

- RegEX
- Docker, Foxglove
- Python (Keras, Scikit-learn, Opencv, Tensorflow)
- Java (JavaFX)
- C++
- Databases (MySQL)

Business:

- Teamwork
- Collaboration
- Communication
- Logistics
- Project Management

COMMUNITY SERVICE

Ryze Tutoring Co.

Vice President

Created Non-Profit 1-1 Tutoring Organization that has over 20 students and 30 tutors.
Volunteered over 100 hours and managed all logistics

InATalent

Tutor

Started classes in electrical engineering, robotics, and 3D design
Taught to over 20 students throughout 2 summers (2020, 2021)
Created individual course material for courses in math and science
Volunteered over 65 hours

JTC Taekwondo Dojo

Junior Instructor

Led classes of younger students
Taught everyone from white to black belt, leading stretches daily
Volunteered for over 30 hours