Siddharth Bharthulwar

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Education

Harvard University — Cambridge, MA
Bachelors of Science in Computer Science & Economics — Aug 2021 – Jun 2025
Admitted through Regular Action

Fairview High School — Boulder, CO
International Baccalaureate Program | National Merit Finalist | GPA : 4.8 | SAT : 1550 | SAT Math II : 800 — Aug 2017 – May 2021
Organizations : Science National Honor Society (President), Technology Student Association (Vice President), Chemistry Olympiad Club (Founder & President), Tennis, Concert Choir (Official Accompanist)

University of Colorado Boulder — Boulder, CO
Dual Enrollment and CU Succeed Credits | Joseph A. Sewall Esteemed Scholar — May 2019 – May 2020
Relevant Coursework : University Calculus 2 (MATH 2300) and Calculus 3 (MATH 2400)

Experience

CT Imaging Research Fellow, University of Pennsylvania Medical School — May 2020 - Present
- Spearheaded novel deep learning models for few-view radiographic CT imaging, reducing radiation dosage by 95% and costs by 91%
- Presented to Penn Radiology faculty, submitted to 2021 Fully3D Imaging Conference, IEEE Transactions in Medical Imaging Journal

Python | AWS | Keras | MATLAB | Visual Studio Code

Traffic Modeling Researcher and Software Engineer, Denver Regional Transportation District (RTD) — Apr 2019 - Present
- Collecting positional data of scheduled bus services via REST API to identify points of congestion with a graph-based model.
- Engineering live tracking web app to drive future schedule modifications on Greater Denver Area bus routes.

Java | GTFS | Protobuf | REST | Python | Matplotlib | MongoDB

UAV Intelligence Research Intern, CU Boulder Dept. of Aerospace Engineering Sciences — Mar 2019 - Aug 2020
- Developed human-augmented UAS navigation and planning algorithms with Dr. Nisar Ahmed of Cooperative Human-Robot Intel Lab
- Built online data collection portal for human-augmented machine learning. Project sponsored/funded by NASA & US Dept. of Defense

Python | PyQT | Unreal Engine | Bayesian Search | Scikit-learn | ReactJS

International Representative & Admin Board, Helpful Engineering — Mar 2020 - Aug 2020
- One of the lead administrators within an international engineering incubator connecting over 19,000 doctors, engineers, scientists.
- Leading project with radiologists from Stanford Medical School for COVID-19 patient outcome based on preexisting medical records.

Independent Projects

COVID-19 Diagnostics Toolkit — Mar 2020 - May 2020
github.com/siddharthbharthulwar/nCov-Tracker
Graphical and statistical toolkit for tracking and monitoring the 2020 outbreak of COVID-19. Current functions include exponential and logistic regression for all regions, as well as LSTM forecasting from Johns Hopkins University dataset.

Python | tkinter | REST | Matplotlib | SciPy | NumPy

Synthetic Vision System — May 2019 - Apr 2020
github.com/siddharthbharthulwar/Synthetic-Vision-System
Machine-learning-powered navigational and visual aid for commercial pilots landing in low visibility conditions. Harnessing low-cost heads-up-display hardware, data are projected onto cockpit windscreen to increase situational awareness. Pending utility patent.

Python | Java | OpenGL | Scikit-image | GIS

Selected Honors

Invited Presenter, 16th International Conference on Fully-3D Nuclear Image Reconstruction — Mar 2021
Selected as a poster presenter in the largest and most reputed conference on tomographic imaging, held in Leuven, Belgium.

Regeneron International Science and Engineering Fair (ISEF) Finalist — Feb 2021
Selected as a finalist in the largest precollegiate science and engineering fair in the world.

Regeneron Science Talent Search (STS) Scholar — Jan 2021
Selected as one of the top 300 brightest young scientists in the nation's oldest and most prestigious science competition

National History Day National Finalist & 1st in Colorado — Jun 2019
Nominated as top documentary (1st out of 250 statewide). Interviewed astronauts, NASA CTOs, White House senior advisors

Skills

Technical	Machine learning, Python, Keras, Tensorflow, SciPy, NumPy, Java, UniREST, ReactJS, NodeJS, HTML/CSS
Graphical	Adobe Photoshop, Adobe Illustrator, Adobe After Effects, Adobe Lightroom, Adobe Premiere, DaVinci Resolve, Audacity
Scientific	Computed tomography, x-ray radiography, biomedical image processing, neural networks