

Siddharth Bharthulwar

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Education

California Institute of Technology Bachelor of Science in Computer Science Relevant Coursework	Pasadena, CA Sept 2021 – Present
Fairview High School International Baccalaureate Program National Merit Finalist GPA : 4.8 SAT : 1550 SAT Math II : 800 Organizations : Science National Honor Society (President), Technology Student Association (Vice President), Chemistry Olympiad Club (Founder & President), Tennis, Concert Choir (Official Accompanist)	Boulder, CO Aug 2017 – May 2021
University of Colorado Boulder Dual Enrollment and CU Succeed Credits Joseph A. Sewall Esteemed Scholar Relevant Coursework : University Calculus 2 (MATH 2300) and Calculus 3 (MATH 2400)	Boulder, CO May 2019 – May 2020

Experience

CT Imaging Research Fellow, University of Pennsylvania Medical School ▶ 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 <div>PythonAWSKerasMATLABVisual Studio Code</div>	May 2020 - Present
Traffic Modeling Researcher and Software Engineer, Denver Regional Transportation District (RTD) ▶ 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. <div>JavaGTFSProtobufRESTPythonMatplotlibMongoDB</div>	Apr 2019 - Present
UAV Intelligence Research Intern, CU Boulder Dept. of Aerospace Engineering Sciences ▶ 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 <div>PythonPyQTUnreal EngineBayesian SearchScikit-learnReactJS</div>	Mar 2019 - Aug 2020
International Representative & Admin Board, Helpful Engineering ▶ 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.	Mar 2020 - Aug 2020

Independent Projects

COVID-19 Diagnostics Toolkit 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. <div>PythontkinterRESTMatplotlibSciPyNumPy</div>	Mar 2020 - May 2020
Synthetic Vision System 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. <div>PythonJavaOpenGLScikit-imageGIS</div>	May 2019 - Apr 2020

Awards

Regeneron International Science and Engineering Fair (ISEF) Finalist Selected as a finalist in the largest precollegiate science and engineering fair in the world.	Feb 2021
Regeneron Science Talent Search (STS) Scholar Selected as one of the top 300 brightest young scientists in the nation's oldest and most prestigious science competition	Jan 2021
Yale Science and Engineering Excellence Award Awarded as most outstanding research project in Computer Science, Engineering, Physics, or Chemistry at ISEF qualifying fairs	Apr 2020
National History Day National Finalist & 1st in Colorado Nominated as top documentary (1st out of 250 statewide). Interviewed astronauts, NASA CTOs, White House senior advisors	Jun 2019

Skills

Technical	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, remote sensing, image processing, convolutional neural networks, signal processing
Soft	Interviewer/questioner, scientific/technical writer, concise communicator, leader by example, project manager