# Imran Ahmed

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## EDUCATION

**University of Cambridge, Gonville & Caius College** 2014 – 2018
*Candidate for BA and Masters in Information & Computer Engineering*
***First Year Classification:*** *First Class,* ***Second Year Classification:*** *First Class,* ***MIT GPA:*** *5.0/5.0*
**Master's Project:** Creating a diagnostic tool to identify lung diseases from stethoscope sounds using Machine Learning
**Relevant Courses:** Computer Vision, Probabilistic Machine Learning, Practical Optimisation

**Massachusetts Institute of Technology** 2016 – 2017
*Selected as one of twenty students for the Cambridge-MIT Exchange Programme (concentrating in Computer Science)*
**Relevant Courses:** Intro to Algorithms, ML for Healthcare, Computer Systems Engineering, Biomedical Signal & Image Processing

## EXPERIENCE AND SKILLS

**Frameworks**: OpenCV, Tensorflow, Keras, Caffe, sklearn, iOS, .NET **Languages**: Python, MATLAB, C++, Swift, C#, JS/HTML

**Vivacity Labs, London:** *(Computer Vision and Machine Learning Start-up) – Product Manager Intern* June '17 – Sept. '17

- Led the design and development of a novel Cordova-based mobile transport app ("MotionMap") to commercialise the world's largest city-wide smart-sensor deployment in Milton Keynes, UK. Expected uptake is ~50,000 users.
- Developed internal web-tools to reduce the time spent manually annotating facilities within cities by more than five-fold.
- Facilitated the installation of the sensor network by creating algorithms to help lower installation costs by > £50,000.

**Interactive Robotics Lab, MIT:** *(Robotics Research Group) – Undergraduate Researcher* Sept. '16 – June '17

- Developed an astronaut detection system for the International Space Station, using machine learning. This formed part of a NASA-led research project at MIT for an autonomous robot ("Astrobee") which will be deployed on the ISS in 2018.
- Improved an open-source detection system and implemented a multi-processing module for parallelised classification.

**Vivacity Labs, London:** *(Computer Vision and Machine Learning Start-up) – Software Developer Intern* June '16 – Aug. '16

- Upgraded an outdated deep learning framework to give a 300% increase in the model training speed.
- Designed an algorithm in C++ to optimise a neural network by using computer vision to process the model's predictions and automatically identify incorrect/uncertain output for further retraining and fine-tuning.

## RECENT EXTRACURRICULAR PROJECTS

**Hackbridge.io:** *Student Innovation & Making Group; https://hackbridge.io* Jul. '17 – Present

- Founded a student organisation to foster an undergraduate 'maker' environment at Cambridge University by organising weekly events to encourage students to work together on innovative side-projects/research in their spare time.

**Pure Interaction:** *HackMIT 2017 Top 10 finalist; Microsoft Prize Winner* Sept. '17 – Present

- Created software to allow users to browse and interact with the web with just their gaze, facial expression and voice.
- We are improving our work with better ML/CV techniques as part of a submission to the Microsoft Imagine Cup.

**SpatialRL:** *Improbable Prize Winner, Hack Cambridge 2017* Jan. '17

- Created a novel platform to facilitate the training of Reinforcement-Learning agents by combining Unity and SpatialOS.
- Successfully implemented DQNs to achieve a task and demonstrated that SpatialOS could speed-up RL training using A3C. Our team was awarded a prize at Hack Cambridge by Improbable (the simulation company that built SpatialOS).

**Educational Video Compression:** *Prize Winner, Facebook Global Hackathon Finals; http://ylgh.github.io* Oct. '16 – Dec. '16

- Created a method to compress educational videos by 100x to reduce the data cost of accessing online education.
- We productised and donated our algorithm to DotLearn, an MIT-based education startup working on a similar problem.

**Cambridge University Eco Racing, Cambridge UK:** *Solar Vehicle Development; Business Manager* Oct. '15 – June '16

- Led a 10-person team to raise funds for this student-run organisation with an operating budget in excess of £1m.

## AWARDS AND ACHIEVEMENTS

**2017 – RAEng Future of Engineering Prize (Runner-Up):** A national prize for engineers who display strong entrepreneurial talent.

**2015 & 2016 – Scholarships to Caius College, Cambridge:** Awarded scholarships for my performance in my examinations.

**2016 – RAEng Engineering Leaders Scholarship:** Awarded a £5,000 scholarship for demonstrating strong leadership potential.

**2014 – ARM Prize:** Awarded team prize for the best robot in a competition for 1st year Cambridge Engineers.