

REMY TRAN

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London, United Kingdom

EDUCATION

Biomedical Engineering

King's College London

09/2018 - 07/2021

- Predicted **First Class**.
- Relevant Modules: Modelling Flow, Computational Applied Biomathematics, Signal & Image Processing, Object-Oriented Programming (C++), Machine Learning, Advanced Mechanics and Medical Imaging.

A-Levels & GCSEs

Westcliff High School for Boys

- A-Levels: Biology-A, Chemistry-A, Mathematics-A, Physics-B
- GCSEs: 9A*s and 5As with A*s in Mathematics and Further Mathematics
- Positions:** Form Captain, Chemistry Subject Prefect

RESEARCH EXPERIENCE

Development and Evaluation of Therapy Phantoms and their Robotic Delivery

BEng Research Project

10/2020 - Ongoing

- The aim is to create a sensorised pump that will deliver fluids at desired velocities.
- This will deliver stem cell treatments to patients suffering from age-macular degeneration (AMD).
- The housing for the robot will be designed using OnShape and will be 3D printed.
- Utilise and develop skills in Arduino and CAD.
- Completed literature review of current treatments for AMD.

iGEM - Renervate

Co-Head of Bioprinting & Dry Lab

02/2020 - Ongoing

- Our team, Renervate is partaking in an international competition hosted by MIT with over 200 teams from around the world.
- Developed a novel treatment for spinal cord injury utilising a PCL (polycaprolactone) scaffold coated with a mussel foot protein acting as a bioadhesive.
- As the head of bioprinting and dry lab I was responsible for organising sub-team meetings and for making relevant project decisions.
- Selection of the final scaffold design by performing Finite Element Analysis on the proposed designs.
- Designed a degradation program to calculate the performance of the scaffold with MATLAB, thus developing my coding skills.
- Analysis of micro and macro architectures within Autodesk Inventor, as well as utilising the NASTRAN extension.
- Segmentation of patient MRI scans to personalise treatments.
- Co-wrote an article for the The Oracle (KCL Blockchain) as well as publishing an academic poster to obtain the King's KURF Research Award.
- Won the Promega Corporation financial grant of \$2,500, that covered the registration fee for the competition.
- This project taught me the importance of medical devices and how it can directly affect patients' quality of life as well developing the fundamental skills of teamwork and leadership.

RELEVANT RESEARCH SKILLS

HTML & CSS

Used HTML and CSS to design and format the wiki for Renervate.

MATLAB

For signal & image processing MATLAB was used for compression techniques eg. LZW, Huffman, and Run Length Encoding. Furthermore, I have used it for data processing, signal analysis, and image reconstruction.

C++

Designed software to analyse physiological signals eg. ECG and respiratory signals; computing the average heart-rate and detecting potential abnormal heartbeats from ECG signals as well as identifying end-expiratory periods from the respiratory signals.

Python

Worked with SciKit Learn, Keras, Pandas and Numpy libraries for machine learning.

CAD

Used Autodesk Inventor to design scaffolds for Renervate as well as utilising NASTRAN to perform Finite Element Analysis to evaluate the stresses and strains on the scaffold.

ITK Snap

I have used this software to segment syringomyelia (cyst) of the spinal cord, brain, and heart scans, to obtain a 3D model to be 3D printed.

VOLUNTEERING

KCL Engineering Society

Social Secretary

02/2020 - Ongoing

- Responsible for organising social events for KCL EngSoc.
- Emphasis on providing a comprehensive experience for incoming students (2020/21) due to Covid-19.

LANGUAGES

English Native ●●●●●

Cantonese Proficient ●●●●●

Mandarin Intermediate ●●●●●

German Intermediate ●●●●●

AWARDS

iGEM: Best Overgraduate Therapeutics

RESEARCH EXPERIENCE

Student Researcher

Department of Engineering, King's College London

📅 06/2020 - 08/2020

- As robots become more widely used it is crucial to monitor emotions between a human and a robot.
- The aim was to model emotions such as amusement, empathy and boredom in HRI using a data set containing audio and visual cues.
- The data will be trained for specific features to allow the robot to interpret emotion inputs.
- A neural network would be generated to allow for video and audio inputs which would then allow robots to detect the emotion from the input signals.
- This internship was conducted virtually which taught me how to work collaboratively in a multi-disciplinary team remotely.

Summer Internship

Haemod

📅 06/2019 - 06/2019

Haemodynamic Modelling Research Group

- Research on pulse wave analysis in the aorta and brachial artery.
- Investigated aortic and brachial waveforms using characteristic points.
- Used MATLAB to conduct statistical analysis on large datasets.

AWARDS

iGEM Gold Medal

KURF Research Award

Piano Grade 6 ABRSM