

## EDUCATION

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### University College London

London, UK

M.S. in Robotics and Computation, Current GPA: 76.7, Distinction

2022–2023

- Anticipate receiving the dissertation grade in November
- Dissertation: “Automated Positioning of a Flexible X-ray Detector: Improving Cancer Detection in Robotic-Assisted Surgeries”

### Université Toulouse III

Toulouse, FR

B.E. in Electronics, Electrical Energy, Automatic, GPA: 13.25/20 (ranked 2<sup>nd</sup>/165 in the dept.)

2021–2022

### Northeastern University

Shenyang, CN

B.E. in Materials Science and Engineering, GPA: 88.69/100, (ranked 6<sup>th</sup>/90 in the dept.)

2018–2021

## PROJECT EXPERIENCE

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See full list of projects on [chaoyuefei.github.io/project](https://chaoyuefei.github.io/project)

### Object Detection and Localization for Pick and Place

London, UK

Course Project, Core Team member

Spring 2023

- The project utilized ROS, Gazebo, C++, MoveIt!, and PCL (Point Cloud Library) to perform a pick-place task
- Created a simulated environment using ROS and Gazebo, integrated MoveIt! to enable precise robot movements for pick and place tasks
- Developed an efficient and effective algorithm for object detection and localization using the Point Cloud Library
- Implemented object counting functionality to specifically identify nought and cross shapes while excluding black obstacles

### Structural-Functional Connectomes Relationship Modeling in the Brain

London, UK

Research Project, Core Team member

Spring 2023

- The project aimed at modeling and investigating the complete pattern of interconnections in the brain
- Explored the graph properties of connectomes, determined how they are affected by certain parameters
- Investigated structural-functional connectomes relationship by predicting direct and indirect weights
- Devised an additional model for the relationship between the structural and the functional connectivity data
- Authored a scientific report with a comprehensive analysis of the research, delivered a professional presentation

### Automating a Flexible X-Ray Detector Positioning in Cancer Detection

London, UK

Master's Dissertation

Summer 2023

- The project developed an innovative approach using imaging skins as X-ray detectors in robotic surgeries
- Designed and implemented the Camera Viewpoint Autonomous System (CVAS) to capture high-quality images of imaging skins
- CVAS automatically determined optimal camera viewpoint and lens settings, overcoming technical constraints
- Experimentally demonstrated the effectiveness of CVAS in providing clear and comprehensive views
- Explored the integration and cooperation between camera, imaging skins, and the X-ray source, contributing to the advancement of cancer detection and surgical procedures
- Gained practical experience with hardware (UR3 robot) and software (ROS 1 & 2, Gazebo) for precise positioning and control

## SKILLS

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- **Programming:** Python, Matlab, C/C++, VHDL
- **M. Learning:** PyTorch, TensorFlow, Keras
- **Tools/Techs:** CAD, Git, ROS1&2, Arduino
- **OS:** MacOS, Linux, Windows

## LANGUAGES

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- **English:** Proficient, IELTS score: 7.0
- **Mandarin:** Mother tongue, native speaker
- **French:** Fluent, CEFR level: B2

## SCHOLARSHIPS AND AWARDS

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| • Outstanding Graduate of Northeastern University                                   | Spring 2022 |
| • Northeastern University Outstanding Group Leader (top 2)                          | 2019–2021   |
| • Northeastern University Second-Class Scholarship                                  | 2018–2021   |
| • Northeastern University Outstanding Student Leader (top 5%)                       | 2018–2019   |
| • Machine Learning Plus Deep Learning MIT Summer Online Study Scholarship (top 30%) | Summer 2020 |
| • Champion of College of Materials Basketball Tournament                            | Summer 2021 |
| • Runner-up of Northeastern University Football Cup for Undergraduate Students      | Summer 2021 |

## LEADERSHIP EXPERIENCE

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|---|-----------|
| • Academic Representative, MSc Robotics and Computation, University College London                                      | 2022–2023 |
| – Served as a liaison between students and program administration, ensuring effective communication and support         |           |
| – Gathered and reported feedback from peers, advocating for student needs and concerns                                  |           |
| – Supported classmates by providing guidance, fostering a sense of community within the program                         |           |
| • Captain, College Football Team  | 2020–2021 |
| – Led the team to participate in prominent university tournaments, helped secure a 2nd place                            |           |
| – Managed team finances by procuring competition supplies, clothing, and insurance for team members                     |           |
| – Successfully sought sponsorship of 2,000 RMB to support team expenses, ensuring financial stability for the season    |           |
| • Head of Events, Executive Committee, Sino-French College of Engineering Student Union                                 | 2018–2021 |
| – Organized activities including the first International Cultural Festival, freshman orientation, and recruitment       |           |
| – Facilitated effective communication and teamwork among committee members and the broader organization                 |           |
| – Assisted fellow students by addressing their challenges and effectively communicating issues to the school or college |           |