

# Zhenyuan (Desmond) Liu

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## Current Position

**Research Intern, Institute of Science and Technology (IST) Austria**  
Advisor: Prof. Bernd Bickel

2021.08 – 2022.08

## Publication

**Zhenyuan Liu**, Hao Xu, Jingyu Hu, Peng Song, Ran Zhang, Bernd Bickel, Chi-Wing Fu: *Worst-case Rigidity Analysis and Optimization for Assemblies with Mechanical Joints* (Conditionally accepted to Eurographics 2022)

## Education

**The Chinese University of Hong Kong (CUHK)**

2017.09 – 2021.07

BSc. in Computer Science. First Class Honors. Major GPA: 3.95/4.00.

**University of Toronto**

2020.01 – 2020.04

Exchange Program

## Research Experience

**Internship Project: Computational Embroidery**

2021.09 – Present

- Advisor: Prof. Bernd Bickel, IST Austria
- Recreate a chromatic image in the real world using a programmable sewing machine
- Model the stitch pattern, optimize the color accuracy, and incorporate user-specified structures

**Graduation Project (Conditionally Accepted to EG 22): Rigidity Analysis for Assemblies** 2020.07 – 2021.09

- Advisor: Prof. Fu Chi-Wing, CUHK and Prof. Bernd Bickel, IST Austria
- Proposed a metric to measure rigidity of assemblies and devised algorithms to improve the rigidity
- Designed and conducted physical experiments with LEGO and 3D-printed parts

**Summer Project: Saving Computation by Slicing Neural Networks Using SVM**

2020.06 – 2020.09

- Advisor: Prof. Anand Sarwate, Rutgers University
- Funded by Professor Charles K. Kao Research Scholarship
- Collected intermediate data of neural networks and used SVM to do binary classification for early stopping

**Summer Project: Generating Adversarial Examples in Text Classification**

2019.06 – 2019.09

- Advisor: Prof. Michael R. Lyu, CUHK
- Faculty 2019 Summer Research *Best Project Award* out of more than 40 participants
- Attacked state-of-the-art text classifiers via white-box and black-box methods and compared the results

## Awards and Honors

Arthur and Louise May Memorial Scholarship

2020

Professor Charles K. Kao Research Exchange Scholarship

2020

Outstanding Academic Performance Scholarship, Dept. of CSE

2018/19, 2019/20

ELITE Stream Scholarship, Fac. of Engineering

2017/18, 2018/19, 2019/20

Dean's List, Fac. of Engineering

2017/18, 2018/19, 2019/20

## Work Experience

**Backend Development Intern, Tencent, China**

2021.01 – 2021.06

- Maintained the backend billing platform that processes millions of API invocations for the cloud services
- Developed using Golang the backend of an internal data platform service

## Skills

Programming  
Languages

Python (PyTorch, NumPy), C/C++ (Eigen), Go, JavaScript, Clojure, Dart  
Mandarin (Native), English (Proficient), Cantonese (Proficient), German (Beginner)