Peter HU CONTACT

University of Cambridge | Jardine Scholar

Computer Science Part IA

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What I really enjoy is the beauty of CS and its application in real life. I am open to new fields of area and enjoy exploring unknown features.

### **SKILLS**

Basic Skill · C · C++ · Java · OOP · CMake · Gdb · Algorithms and Data Structure · Functional Programming (OCaml)

Front-End ·HTML/ CSS ·React ·Latex

Back-End · Database · SQL · NoSQL

Data Sci · Python · NumPy · Machine Learning · Deep Learning · Natural Language Processing · Computer Vision

Graphics · Vulkan · Graphics Pipeline · GPU driver · Game Engines/ Unreal Engine Unity · C#

·Calculus · Linear Algebra · Discrete Math · Probability and Statistics · Abstract Algebra · Topology (basic)

Operating System Process Scheduling, Memory (Segment, Page, VM), I/O, File, Linux ·bash/shell ·Digital Electronic Development Tools git (Version Control), CI/CD pipeline, Docker, Visual Studio, VS Code, Pycharm, Github/Gitlab, IntelliJ IDEA.

## **WORK EXPERIENCE**

GPU Software Engineer Intern Huawei Technologies R&D (UK) Ltd, Cambridge

- Dec 2022- Present · C++, CMake, Gdb, Git version control, CI/CD pipeline, CMake, hands-on experience on Linux server, etc.
- · Introducing independent full automation tools in the project, reducing error rate to nearly 0%. Tool
- Familiar with workflow of GPU industry, Vulkan graphics API; Projects on GPU driver and verification, Game Engines (UE4).
- · Working and collaborating with colleagues, like helping fixing C++ build or link errors.

# **EDUCATION**

University of Cambridge Computer Science, Oct 2022- Present Undergraduate

· Merit-based, fully funded Jardine Scholarship

**Xiamen University** Software Engineering, Undergraduate(First Year) Sep 2021-June 2022

Top 1 academic institution in Southern China, Double First-class University, Project 985, 211.

· GPA: 3.91 / 4.0, rank 1 / 173 (first term), 88/100 (overall) · Class Rep, ACM Team training.

Nanyang Model High School Sep 2018-June 2021

Physics Rep, Leader of a research project. · Awarded ShuPing Scholarship twice

### **HONORS AND AWARDS**

**Gold Medal in UK Tech Arena 2022** with £7000 [C and C++, Compression, Concurrent]

10 Oct-26 Nov 2022

Learning and researching from scratch in a month, digesting lots of papers and source code available, like RFC1951, etc.

- · Responsible for implementation & improvement of LZSS. Engaging in pre-processing, serialization with teammates.
- · Optimization using C pointers, bitwise operators & hash tables. GPU optimization: Branch Prediction.
- · Multi-threading, Parallelization, Concurrent Processing. Project | Blog
- · In a team of 4, Leading the team and communicate with other teammates.

**Top 2 Team in Mercuria Hackathon 2022** [Python, Data Analysis, Route-Planning]

16 Dec-18 Dec 2022

Using data analysis to accelerate the energy transition and reduce the carbon emissions of the maritime industry.

· Networking and collaborating with senior engineers, excellent undergraduate, Master and PhD students from all around the Europe.

Jardine Scholarship, issued by Jardine Foundation

Feb 2022

Merit-based, fully-funded Scholarship during my Undergraduate at University of Cambridge

Adolescents' Science and Technology Innovation Contest Third Place [Research]

Apr 2020

issued by Shanghai Association for Science and Technology, Shanghai Municipal Education Commission

- Deep research into the phenomenon of tire-locking, including why it may happen and its pros and consusing Force Analysis.
- Introduced the Anti-lock braking system into our research by our mentor. Self-made physical simulation test for tire-locking.

Accepted for Publication Twice [English Essays in Shanghai Student Post]

Oct 2018, May 2019

Topic: Effective Ways to Overcome Obstacle in Study, Campus Life without Snack Stores.

# PROJECTS AND ASSIGNMENTS

Computer Vision [Stanford CS231n] Project (Github)

Jan 2023

Python, Numpy, kNN, Softmax, SVM classifier, Cross Validation

Machine Learning and Real-world Data [Cambridge Part IA] Project (Github) | Blog Jan 2023

Text Classification using ML with improvements, including Naive Bayes classifier, Cross-Validation, NLP, HMM

Artificial Intelligence Stanford CS229 Project (Github)

Oct 2022

· Linear classifiers (Logistic Regression, GDA), Stochastic Gradient Descent, L1 L2 Regularization, SVM

Database Design Project (C++) [CMU15-445 Project] Project (Github) Blog

Aug-Oct 2022

· Buffer Pool Management System, Latch, LRU

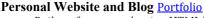
Typing Game (C & EasyX) Project (Github) | Blog

- · Replacement policy. In order to solve the concurrent problem, implement the Parallel Buffer Pool Manager.
- · Using C++ STL, Google C++ Style Guide

Computer Graphics (C++, OOP, OpenGL) [MIT6.837 Assignment] Project Blog

Jul-Sep 2022

- · Ray casting, normal visualization, rendering, voxel rendering, super sampling and 3D
- · Huge OOP project, with 3D objects, light, camera classes. Building over 20 C++ source files from scratch.
- · Composite design pattern for 3D objects class hierarchy with transformation.



Aug 2022

Built up from scratch using HTML/CSS · Deployed by React to enable high code reuse.

Multifunctional Supermarket Management System (C++, OOP) Project | Blog

Apr 2022

· Inheritance, polymorphism (Operator Overloading); Read/Write Files, etc

Dec 2021