Peter **HU**

University of Cambridge | ⚡*Jardine Scholar*
Computer Science Part IA

CONTACT
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in LinkedIn | ⭘ Github | 🌐 Portfolio

SKILLS

·C ·C++ ·Java ·OOP ·HTML/ CSS ·CMake ·Gdb ·bash/shell ·git ·Algorithms and Data Structure
·Database ·SQL ·NoSQL ·Latex ·Functional Programming (OCaml) ·Digital Electronic
·Python ·NumPy ·Machine Learning ·Deep Learning ·Natural Language Processing ·Computer Vision
·Computer Graphics ·Vulkan ·GPU 3D Pipeline ·GPU driver ·Game Engines/ Unreal Engine Unity ·C#
Development Tools Visual Studio Code, Visual Studio, Pycharm, Github, IntelliJ IDEA
·Calculus ·Linear Algebra ·Discrete Math ·Probability and Statistics ·Abstract Algebra ·Topology (basic)

ABOUT ME

Computer Science student studying at University of Cambridge. What I really enjoy is the beauty of Computer Science and how it can be applied in real life. I am open to new fields of area and enjoy exploring unknown features.

WORK EXPERIENCE

GPU Software Engineer Intern *Dec 2022- Present*
Huawei Technologies Research & Development (UK) Ltd   Cambridge, England, United Kingdom
Skills: C++ · CMake · Vulkan · GPU 3D Pipeline · GPU driver · Game Engines/ Unreal Engine · Gdb

EDUCATION

University of Cambridge   *Computer Science,   Undergraduate* *Oct 2022- Present*
· *Merit-based, fully funded Jardine Scholarship*
Xiamen University   *Software Engineering, Undergraduate(First Year)* *Sep 2021-June 2022*
· *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 *£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.
· *Great Team Work, Collaboration.*
· *Networking 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 *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 cons using 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
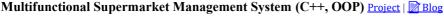**Database Design Project (C++)** *[CMU15-445 Project]* Project (Github) |📝 Blog *Aug-Oct 2022*
· Buffer Pool Management System, Latch, LRU
· Replacement policy. In order to solve the concurrent problem, implement the Parallel Buffer Pool Manager.
· Using C++ STL, Google C++ Style Guide
Computer Graphics (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.
Multifunctional Supermarket Management System (C++, OOP) Project |📝 Blog *Apr 2022*
· Inheritance, polymorphism (Operator Overloading); Read/Write Files, etc
Typing Game (*C* & EasyX) Project (Github) |📝 Blog *Dec 2021*

INTEREST AND EXTRACURRICULAR ACTIVITIES

Music, Swimming, Yoga, Gym, Helping others etc. | Society Joined: Ethics in Mathematics
Economics Related Topics: Macro & Micro, Money Banking