

Chen, Zihan

Software Engineer @ Intel PSG

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WORKING EXPERIENCE

Intel PSG High Level Design group, SoC Design Engineer

03/2018 - Present

Designing and updating OpenCL runtime library for Intel FPGA SDK for OpenCL.

Teaching Assistant, University of Toronto

09/2016 – 04/2017

CSC 258 Computer Organization (Winter 2016)

APS 105 Computer Fundamentals (Winter 2016)

ECE 253 Digital & Computer System (Fall 2016)

CSC 180 Introduction to Computer Programming (Fall 2016)

EDUCATIONAL QUALIFICATIONS

University of Toronto, Master of Applied Science

09/2015 – 09/2017

Overall GPA: 4.0/4.0 | Research assistant at Signal Integrity Laboratory | IEEE Student Member

Research Area: High Performance Computing, Numerical Computing, Computer Graphics, Machine Learning

Zhejiang University, Bachelor of Engineering (Honors)

09/2011 - 06/2015

Overall GPA: 3.85/4.0 | Information Engineering | Ranking: Top 5% of 149 students

Research & Coursework: Computer Vision, Software Engineering, Operating Systems, Embedded System

University of California, Davis

07/2014 - 09/2014

Global Research Experience in Advanced Technologies (GREAT) Program | Research Internship

PROGRAMMING SKILLS

Language: C++, C, Perl, Python, Verilog HDL, MATLAB, Bash, Java, Go, html, Sql

Toolkits & Software: OpenCL, Visualization Toolkit (VTK), MPI/OpenMP/CUDA, Hadoop/MapReduce, Docker

RESEARCH & PROJECTS

Thesis: Computational Fluid Dynamics Toolkit for Vascular Modeling and Simulating

2015 - 2017

- 3D geometry reconstruction and Delaunay meshing of the cardiovascular system from its MRI images.
- Implementing MPI for solving the Navier-Stokes equations via Finite Element Analysis in parallel.
- Achieving: **93%** of studied cases show great consistency with the clinical data.

N-Gram AutoComplete, Hadoop/Map Reduce

2017

- Building N-Gram Library from wiki datasets and creating Language Model based on its probability of occurrence. Using MySql Database for Querying.
- Accessing database and showing auto completion results on local host via JQuery, PHP and Ajax.

Recommender System, Hadoop/Map Reduce

2017

- Implementing the item collaborative filtering algorithm to generate the co-occurrence matrix and the user-specific rating vector based on the users' rating history from the Netflix Prize Data Set.
- Matrix computation with Map Reduce jobs to find out the recommending movie(s) for specific users.

2D Finite Element Analysis on Transmission Line problems, Numerical Computing

2016

- Computing the electric distribution on the cross section of Transmission Line by solving Maxwell's equations via FEM. Comparison of the results from my solver and COMSOL shows very good consistency.
- Parallelize the matrix manipulation with MPI. For 5000 elements scale, implementing with 1, 2, 4, 8, 16, 32, 64 cores, the performance is enhanced by 1.0, 1.99, 3.93, 7.65, 10.28, 12.71, 13.74, respectively

High Resolution Stereoscopic Display System

2014 - 2015

- Video streaming Face Recognition by OpenCV Haar cascading classifier and AdaBoost algorithm. Using Integral Image to accelerate processing.
- Stereoscopic Visual Reconstruction for auto stereoscopic display via OpenGL.

CONFERENCE AND PUBLICATION

[1] Z. Chen, F. Ballarin, G. Rozza, A. M. Crean, L. Jimenez-Juan, P. Triverio, "Non-invasive assessment of aortic coarctation severity using computational fluid dynamics: a feasibility study," in 20th Annual Scientific Sessions, Society for Cardiovascular Magnetic Resonance, Washington, DC, Feb. 1--4 2017