Parallel Programming

National Tsing Hua University

2019, Summer Semester

Instructor & TA Information

- Instructor: 周志遠教授 (Jerry)
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  - Office/phone: 台達602 / 42801
  - Office hour: email for appointment
- TA: 尤立宇
  - Email: ly.yu@lsalab.cs.nthu.edu.tw
  - Office/phone: 資電836 / 33538 (台灣)
  - Office hour: email for appointment
  - Lecture & Demo for Programming homework

Course Website

- Website: https://lms.nthu.edu.tw/course/40233
  - Announcement
  - Materials (lecture/project slides)
  - Discussion forums

Course Contents

- Introduction to Parallel Computers and Computing
- Programming Languages
  - Message Passing Interface (MPI)
  - Thread Programming: Pthread
  - OpenMP
  - GPU Programming: CUDA
- Parallel Computing Algorithm & Techniques
  - Embarrassingly computing
  - Divide & Conquer
  - Pipeline、Synchronous computing
  - Load balancing

Grading Information

- 3 Programming Assignment: 82%, **individually**
  - Parallel Odd-Even Transposition Sort (MPI): 25%
  - Mandelbrot Set (MPI + OpenMP, Pthread): 27%
  - Blocked All-Pairs Shortest Path (CUDA, Pthread) : 30%
- 6 Labs: 18%, **individually**
- **0** will be given to **cheater (copying code)**
  - but, discussion on code is encouraged
- Any late submission is allowed
  - But 3 days will be given for correction after demo

Course Agenda & Classroom Location

Date	Time	Topic	Location	Time	Topic	Location
7/2	9:00~12:00	Lecture1	六教6A207	13:30~16:00	Lab1	東主樓9區223室
7/3	9:00~12:00	Lecture2	六教6A207	13:30~16:00	Lab2	東主樓9區223室
7/4	9:00~12:00	Lecture3	六教6A207	13:30~16:00	Lab3	東主樓9區223室
7/9	9:00~12:00	Lecture4	六教6A207	13:30~16:00	TA Session	東主樓9區223室
7/10	9:00~12:00	HW1 Demo	東主樓9區223室	13:30~16:30	HW1 Demo	東主樓9區223室
7/11	9:00~12:00	Lecture5	六教6A207	13:30~16:00	Lab4	東主樓9區223室
7/18	13:30~16:30	Lecture6	台達館105	19:00~22:00	HW2 Demo	資電館836
7/22	9:00~12:00	Lecture7	台達館105	13:30~16:00	Lab5	資電館323
7/23	9:00~12:00	Lecture8	台達館105	13:30~16:00	Lab6	資電館323
7/25	10:00~12:00	TA session	資電館836	13:30~16:30	Lecture9	台達館105
7/30				13:30~16:30	HW3 Demo	資電館836
8/1	10:00~12:00	TA Session	台達館105			

Reminder

- It will be in a FAST pace
  - **5 weeks** to cover the load of a whole semester
  - Learn by **doing**
- It will be dynamic
  - Pay attention to the announcement for the time of our **lectures**, **labs**, and **demo**
  - In principal, **morning session 9am-noon, afternoon session 1:30pm-4:30pm**
  - **Detailed agenda will be announced on iLMS**