

Cheng-Hsiang Chiu

<https://cheng-hsiang-chiu.github.io/>

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EDUCATION

- **University of Utah** Salt Lake City, USA
Ph.D. in Electrical and Computer Engineering Aug. 2020 – Present
- **École Polytechnique Fédérale de Lausanne** Lausanne, Switzerland
Master of Science in Computer Science Sep. 2013 – Feb. 2016
- **National Chiao Tung University** Hsinchu, Taiwan
Master of Science in Communication Engineering Sep. 2005 – Aug. 2007
- **National Chung Cheng University** Chiayi, Taiwan
Bachelor of Science in Electrical Engineering Sep. 2001 – Jun. 2005

ONGOING PROJECTS

- **Taskflow**: Developing a pipeline scheduling framework (Pipeflow) on top of Taskflow (<https://taskflow.github.io>).
- **syclFlow**: Leveraging a task graph algorithm of CUDA graph into a SYCL runtime.

EXPERIENCE

- **Intel** Texas, USA
Software Intern May 2022 - Aug. 2022
 - **oneAPI and SYCL**: Mainly working on SYCL.
- **Cadence** Texas, USA
Software Intern May 2021 - Aug. 2021
 - **Buffer Insertion Acceleration**: Accelerated the executions of buffer insertion algorithm by 16%.
- **UiT** Tromsø, Norway
Doctoral Researcher Feb. 2019 - Dec. 2019
 - **Edge computing**: Implemented an energy efficient framework to classify Arctic wild animals in-situ.
 - **Power data**: Performed data cleansing and developed visualization framework of power data in Tromsø, Norway.
- **University of Khalifa** Abu Dhabi, UAE
Assistance Researcher Jan. 2018 - Nov. 2018
 - **Graphene**: Automated python-meep for materials modeling and designed data visualization frameworks for it.
 - **Sand classification**: Developed classification techniques to obtain the components of sands in Nigeria.
- **CERN** Geneva, Switzerland
Software Developer Mar. 2015 - Aug. 2015
 - **Consistency checking**: Developed a kernel package to discover devices and perform consistency checking.

SELECTED PUBLICATIONS

- C.H. Chiu and T.W. Huang, "Composing Pipeline Parallelism using Taskflow Control Graph," *HPDC*, 2022.
- C.H. Chiu and T.W. Huang, "Efficient Timing Propagation with Simultaneous Structural and Pipeline Parallelisms," *DAC*, 2022.
- C.H. Chiu, T. W. Huang, Z. Guo, and Y. Lin, "Pipeflow: An Efficient Task-Parallel Pipeline Programming Framework using Modern C++," *Arxiv*, <https://arxiv.org/abs/2202.00717>.
- C.H. Chiu, D.L. Lin, and T.W. Huang, "An Experimental Study of SYCL Task Graph Parallelism for Large-Scale Machine Learning Workloads," *Euro-Par*, 2021.

SKILLS

- **Language:** C, C++, Python, Javascript, HTML, SQL
- **Unit Test:** doctest
- **Profiler:** gprof, perf
- **Programming Model:** Taskflow, SYCL, oneTBB (Pipeline)