

# Cheng-Hsiang Chiu

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

Email : [cheng-hsiang.chiu@utah.edu](mailto:cheng-hsiang.chiu@utah.edu)

Mobile : +1-657-348-3118

## 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

---

- **Cadence** Texas, USA  
*Software Intern* May 2021 - Aug. 2021
  - **Buffer Insertion Acceleration**: Accelerated the executions of buffer insertion algorithm by 16%.
- **UiT** Tromso, 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 Tromso, 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** Geneve, Switzerland  
*Software Developer* Mar. 2015 - Aug. 2015
  - **Consistency checking**: Developed a kernel package to discover devices and perform consistency checking.

## PUBLICATIONS

---

- C.H. Chiu, T. W. Huang, Z. Guo, and Y. Lin, "Pipeflow: An Efficient Task-Parallel Pipeline Programming Framework using Modern C++," *HPDC*, 2022 (submitted), <https://arxiv.org/abs/2202.00717>.
- C.H. Chiu and T.W. Huang, "Late Breaking Results: Efficient Timing Propagation with Simultaneous Structural and Pipeline Parallelisms," *DAC*, 2022 (submitted).
- 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)