Cheng-Hsiang Chiu

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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) with token-dependency atop 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*
  - **SYCL**: Worked on the development of implicit SYCL Graph.

- **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.

SELECTED PUBLICATIONS

- **C.H. Chiu** and T.W. Huang, "Composing Pipeline Parallelism using Taskflow Control Graph," *ACM HPDC*, 2022.

- **C.H. Chiu** and T.W. Huang, "Efficient Timing Propagation with Simultaneous Structural and Pipeline Parallelisms," *ACM/IEEE 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)