Benjamin Chislett

chislett.ben@gmail.com | benjamin.chislett@epfl.ch

Experience

Research Intern *May 2022 - Jan 2023*

Dynamic Graphics Project, University of Toronto

- Researched intrinsic triangulations and coarsening applications for multigrid methods on 3D surfaces
- Developed a novel high-performance intrinsic mesh decimation library in C++ and Python
- Co-authored "Surface Simplification using Intrinsic Error Metrics" in ACM Transactions on Graphics Journal, featured at SIGGRAPH 2023

Research Intern *May 2021 - Sep 2021*

EcoSystem Research Lab, University of Toronto

- Researched auto-scheduling for machine learning compilers in TVM and low-level optimizations for out-performing cuBLAS in CUDA workloads
- Implemented and evaluated novel auto-scheduling algorithms based on the AutoTVM and Ansor
- Received NSERC Undergraduate Student Research Award (USRA) funding

Machine Learning Engineer *Apr 2021 - Aug 2021, July - Aug 2023*

Activeloop AI, California (Remote)

- Designed infrastructure for a cloud machine learning data platform in Python
- Developed machine learning solutions using PyTorch, Tensorflow, and AWS cloud computing
- Architected distributed tensor database systems in C++ and Python, designed and implemented database abstractions and core functionality

Software Developer *Sep 2018 - Jul 2019, May 2020 - Dec 2020*

Mysa Smart Thermostats, St. John's, NL

- Developed and maintained a full-stack TypeScript web interface for an AWS backend
- Authored a suite of libraries for interacting with AWS at multiple layers of abstraction
- Developed various new features for a React-Native mobile application
- Architected a data pipeline used to create a data lake and perform analytics using IaC and SQL

Research Intern *Jul 2019 - Sep 2019*

Okinawa Institute of Science and Technology, Okinawa Prefecture, Japan

- Researched the Compressive Split-Step Fourier Method for solving Gross-Pitaevskii systems. Performed mathematical modeling and validation, optimized numerical GPU solvers, and developed theoretical foundations for order-of-magnitude speedups using compressed frequency methods.
- Maintained GPUE: a CUDA/C++ application for simulating Quantum effects of superfluids
- Authored GPUE.jl: a high performance JuliaLang-GPU implementation of GPUE

Education

First-Year Doctoral Fellow, Computer Science *Sep 2023 - Present*
EPFL, Lausanne, Vaud, Switzerland
- Member of Wenzel Jakob's Realistic Graphics Lab
- Teaching Assistant for Advanced Computer Graphics (CS440), Spring 2024 Semester
- Actively developing high utilization hardware-accelerated machine learning primitives for differentiable rendering in PTX/CUDA

Honours Bachelor of Science, Computer Science *Sep 2019 - May 2023 (05/23)*
University of Toronto, Scarborough, ON
- Cumulative GPA: 3.96
- ICPC North America Finalist, 2020/21

Teaching Assistant at University of Toronto
- Artificial Intelligence (CSCD84),
  Principles of Programming Languages (CSCC24) *Winter 2022/23*
- Computability and Computational Complexity (CSCC63),
  Algorithm Design and Analysis (CSCC73), Computer Graphics (CSCD18) *Fall 2022*
- Introduction to the Theory of Computation (CSCB36), Linear Algebra 2 (MATB24) *Summer 2022*
- Introduction to the Theory of Computation (CSCB36) *Fall 2021*
- Linear Algebra 1 (MATA22), Introduction to Computer Science 2 (CSCA48) *Winter 2020/21*