

# Benjamin Chislett

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## Experience

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### 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 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 automated machine learning computation scheduling for automatic discovery and validation of high-performance parallel machine learning programs
- Developed proposed improvements for machine learning compiler frameworks in CUDA/C++
- 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 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, implemented prototype numerical simulations, and developed theoretical foundations for compressive numerical simulations.
- Maintained GPUE: a CUDA/C++ application for simulating Quantum effects of superfluids
- Authored GPUE.jl: a JuliaLang-GPU implementation of GPUE

## Education

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### **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 researching efficient Neural Graphics Primitives for high-performance Physically-Based Differentiable Rendering

### **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*