

Justin Regef

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Computer Science student focusing on artificial intelligence and computer vision.

EDUCATION

Ecole Polytechnique de Paris

Master of Science and Technology, Artificial Intelligence and Visual Computing

2023 – Present

Palaiseau, France

University of Toronto

Honors BSc with Distinction, Computer Science, Mathematics, Philosophy

2019-2023

Toronto, Canada

- Major in Computer Science, focus on Machine Learning and Computer Vision, Minors in Mathematics and Philosophy
- Member of the MEDCVR research group
- Courses can be viewed on [LinkedIn](#)

Korea Advanced Institute of Science and Technology

Exchange Program in Computer Science Department

Sept. – Dec. 2022

Daejeon, South Korea

Research Internship

Introduction to Research

May – June 2017

Centre de Recherche des Cordeliers, Paris

- Introduction to medical research and use of data analytics tools in the context of medical research.

AWARDS

Department of Philosophy Excellence 300 Prize

Received for high GPA in third year philosophy class.

June 2023

Toronto, UofT

UTM Undergraduate Research Grant

Received for my research in Computer Vision

Dec. 2021

Toronto, UofT

- Received for preliminary research report with the following comment: *Outstanding project, well explained; very pleased to fund the continuation of this research.*

Dean's List Scholar

Received for maintaining high GPA

Fall Semester 2020

Toronto, UofT

- I completed my fifth credit while maintaining a Cumulative Grade Point Average above 3.50/4.00

RESEARCH EXPERIENCE

Computer Vision Researcher

Lead Researcher, Principal Author, Corresponding Author

Aug. 2021 – Present

Toronto, UofT

- **Transformer-based Featureless NR-SfM reconstruction from Monocular Laryngeal Endoscopy data.**
 - Created a novel pipeline and algorithms for non-rigid photogrammetry using state of the art Transformer Neural Network technology for the 3D reconstruction of previously impossible to work with datasets.
 - Lead author of the paper and in charge of correspondence with the IJCARS journal for publishing.
- Skills acquired: numpy, DNN, RNN, PyTorch, TensorFlow, scikit-learn
- Publishing in August. [Latest draft](#). Research team [website](#).

Data Analytics Researcher

Sept. 2021 – April 2022

- **Evaluating Syntax and Design Focused Pedagogies in CS1.**
 - Analyzed student data from online quizzes to create a novel framework for more in-depth auto-grading of student code.
 - Made an AST-based code parser to detect patterns in student code as a means to analyze student coding styles. Helps to identify students' learning of and use code-patterns from lecture, giving insight into students learning strategies and difficulties.
- Skills acquired: Statistical Analysis, Data Structures, Algorithm Design
- Resulted in a [poster](#).

PERSONAL PROJECTS

Partitions of whole numbers

June – July 2020

Personal Coding and Mathematics Challenge

Paris, France

- Used dynamic programming to implement a novel, self-developed, fast algorithm to find the number of partitions of a whole number. My graph-based representation of the underlying structure of how partitions evolve is (as far as I've seen) wholly new.

Screen-Capture Storyboarding Tool

June 2018

Personal Coding Project

Paris, France

- Python tool for generating customizable storyboards based on screen-captures for the use in digital animation.
 - Used by HowCan Studio, a Shanghai-based digital animation studio.

3D Reconstruction of Mayan relics and city

July 2017

Photogrammetry technician and camera operator

Mexico

- Structure from Motion reconstruction of Mayan relics as part of an inquiry into digital cultural preservation and the use of photogrammetry in archeology. Large scale project requiring organization and flexibility.
 - I learned to improvise and become adaptable to novel situations and impromptu constraints.

WORK EXPERIENCE

Personal Tutor

Sept 2019 - Present

- Helping university-level (year 1-3) students understand Mathematics and Computer Science concepts through one-on-one tutelage.

LANGUAGES & INTERESTS

- **Fluent Languages:** French, English, Traditional Chinese
- **Programming Languages:** Python, Java, C, R
- **Interests:** Computer Vision, Machine Learning, Combinatorics, Interdisciplinarity in projects and teams