

CV – Alexandre Mercier-Aubin

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Google Scholar <https://scholar.google.ca/citations?user=N3Yv5IcAAAAJ>

Personal Profile

I am a PhD candidate ABD. My fields of study include computer graphics, physical simulation, optimization and algorithm design, as well as constraint programming. My field of research allows me to choose abstract topics while visualizing the results interactively. My work in computer graphics combines a certain artistic, sometimes even creative, level with the desire to advance the field. My results have led to applications both in surgical simulators and in more recreational contexts such as films and video games.

Education

2020-2024 PhD in Computer Science - McGill University
ABD
GPA: 3.90

2019-2020 M. Sc. in Computer Science - Université Laval
Research in constraint programming with Prof. Claude-Guy Quimper
GPA: 3.93

2017-2019 B. Sc. in Computer Science - Université Laval
honors
GPA: 3.73

2014-2017 DEC in Computer Science - Cégep Lévis-Lauzon

Teaching

Present McGill
teaching assistant and AGSEM delegate
Hold office hours, mark exams, and present various guest lectures for the courses on computer graphics, computer animations, and introduction to computer systems.

2020 Université Laval
teaching assistant
Teach the practical aspect (weekly labs) of the advanced programming in C++ course. Mark the exams in the computer graphics course. Support students at the help centre for computer science students (CARÉ) with questions related to 15 different computer science courses.

Industry

Sum 2024 Autodesk
Research Intern
Rigid body differentiable simulations for surface optimization.

- 2018/05, 2018/09** Activision, Beenox
game engine developer intern
 Design and program the game engine for Call of Duty: Black Ops 4.
 Technologies: DirectX, C++, LUA
 Contributions: Shaders, LOD formulas, Bugfixes, HUD formulas, cross-platform compatibility, etc.
- 2017/01 - 2017/08** Centre de Robotique et Vision Industrielle
Intern/Programmer
 Machine learning applied to Computer Vision, program robot controllers, and develop a new website for employees.
- 2016/05 - 2016/09** Valero, Levis
computer science intern
 Translate programs from Visual Basic to C#.
- 2015/05 - 2015/09** Consortium de ressources et d'expertises coopératives
IT Technician
 IT support, creating and managing a database, creating a web site, etc.

Prizes and Scholarships

- **Fonds de recherche du Québec (FRQNT): 2nd and 3rd cycle scholarship**
 25 000\$ *per year, up to 3 years*
- **Natural Sciences and Engineering Research Council of Canada (NSERC) Alliance Grant**
 15 000
- **Bourse de doctorat Hydro-Québec en Science**
 15 000\$ *per year, up to 2 years*
- **School of Computer Science PhD funding, McGill University**
 21 000\$ *per year, up to 3 years*
 3 000\$ top up from Mechanical Engineering.
- **MITACS accelerate, CRISI**
 39 000\$
- **Undergraduate Research Fellowship 2019-2020, Université Laval**
I declined 6500\$
- **Association for Constraint Programming, CP2019**
 450\$

Research

In order to offer free and open access to scientific innovations, all my publications are listed free of charge on my website: alexandremercieraubin.com/Work

Leadership

- **Undergraduate Projects**
Gaudrophone, BigData7027, and ComputerGraphics, etc.
- **Valleyfield Game Jam**

Other Projects

- **Engines**
 - Adaptive Rigidification Engine
 - A simple computer graphics engine
- **Video Games**
 - Call of Duty: Black Ops 4
 - Proto-Spyder Assault, 48h Valleyfield game dev contest
 - SansFin, french horror game, Cegep school project

Service

AGSEM Delegate: Delegate of the Computer Science department at McGill.

V.P. Social at the AGIL: Organize events for the association of graduate student in computer science.

Volunteer at the ASETIN: Volunteer work at the student association of computer science.

Volunteer at Lévis: Receptionist at the Water Festival of Lévis.

Student volunteer at SCA 2020 and 2024: Support the conference by ensuring the smooth functioning of operations in technical paper sessions and main exhibitions.

Reviewer: review papers for IEEE Transactions on Visualization and Computer Graphics (TVCG)

Referees

Name	Paul G. Kry
Company	McGill
Position	Associate Professor
Contact	kry@cs.mcgill.ca

Name	Sheldon Andrews
Company	École de technologie supérieure
Position	Associate Professor
Contact	sheldon.andrews@etsmtl.ca

Name	David I.W. Levin
Company	University of Toronto
Position	Assistant Professor
Contact	diwlevin@cs.toronto.edu