

# Simon Désaulniers

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📶 [sim590](https://github.com/sim590)

## Education

2016 – 2018 **Master's degree in Computer Science**, *Université du Québec à Montréal (UQÀM)*.  
Advanced operations over distributed hash tables and end-to-end secure group chat.

🔗 [See master thesis.](#)

2010 – 2015 **Bachelor's degree in Computer Science**, *Université du Québec à Trois-Rivières (UQTR)*.

**Bachelor's degree in Mathematics**, *Université du Québec à Trois-Rivières*.

## Professional experience

May 2015 up to August 2017 **Computer science researcher and programmer analyst**, *Savoir-faire Linux*.  
GNU/Ring development (🔗 <https://jami.net>), an audio/video and chat communication software.  
Design and implementation of multiple solutions:

- distributed indexation over a distributed hash table (DHT);
- group chat communication protocol over a DHT;
- data pagination and persistence feature on OpenDHT;
- OpenDHT development and maintenance in general.

🔗 <https://github.com/savoirfairelinux/opendht>

Summer 2012 up to April 2015, **Mathematics and Computer Science research assistant**, *UQÀM, UQTR*.  
Supervised by Alexandre Blondin Massé Ph. D. and Alain Goupil Ph. D. and Sébastien Gambs Ph. D..

August 2017 up to April 2019

- Contribution to the elaboration of an end-to-end secure group chat protocol resisting cipher correlations in asynchronous context while keeping a light network load;
- Design and implementation of polyominoes enumeration tools in order contribute to combinatorics research team's work;
- Marking of undergrads' homework and magisterial demonstrations in laboratories.

🔗 <https://bitbucket.org/ablondin/polyenum>

Summer 2011 **Trainee in Software engineering**, *Johnston-Vermette Groupe Conseil, inc.*, Trois-Rivières.

Non-regression test scripts on Hydro-Québec Gentilly-2 nuclear plant computer systems.

## Publications

2017 **Fully Distributed Indexing over a Distributed Hash Table.**

Simon Désaulniers et al. "Fully Distributed Indexing over a Distributed Hash Table". In: Ubiquitous Networking. Ed. by Essaid Sabir et al. Cham: Springer International Publishing, 2017, pp. 308–318. isbn: 978-3-319-68179-5.

## General abilities

Languages French, Esperanto, English.

Personal attributes Analytical skills; initiative; organised and rational; good communication skills; work well alone or as part of a team; flexible; can easily adapt to new situations.

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## Conferences and collaborative programs

- GoSec 2018 (Montréal) GoSec is an annual convention which brings together several experts in the IT security field, from both the private and public sector.
- UNet 2017 (Casa Blanca, Maroc) Third Symposium on Ubiquitous Networking. Presentation of a scientific paper.
- GSoC 2016 (Montréal) Participating in Google Summer of Code for the Debian project. Contribution to efforts aiming at the design of a solution to divers DHT optimizations for the OpenDHT project.
- Debconf 2016 (Cape Town, South Africa) Annual conference of the Debian project. Presenting GNU/Jami (anciennement GNU/Ring). [See the video recording](#).

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## Personnal projects and relevant contributions

- Debian, Archlinux Writing and maintenance of packages in addition to various contributions to documentation and bug tracking.
- [dpaste](#) Pastebin over a DHT.
- [qurlshare](#) Qutebrowser extension for URL sharing between multiple machines over a DHT.
- [amh](#) AwesomeWM window manager extension for launching programs simultaneously on multiple computers.
- [yauml](#) YAML formatted UML diagram translation to Graphviz compatible input file, notably enabling generation of PDF files.
- [splitbmf](#) Audio/video file splitting tool.

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## Particular knowledge

- Concepts Cryptography, formal security analysis, end-to-end encryption, communication protocol, algorithm optimization, distributed hash tables, blockchain, byzantine generals problem, free software.
- Computer languages C/C++, Python, Java, C#, Lua, Bash,  $\text{\LaTeX}$ , Vimscript, BRE, ERE, PCRE, HTML, CSS, PHP/SQL, Javascript.
- Operating systems GNU/Linux (Debian, Ubuntu, Archlinux), Android.
- Software and tools Vim, Git, GNU Make, GNU Gdb, GNU Autotools, CMake, Setuptools (Python), GNU shell.

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## Hobbies

- Cultural Language learning, book reading.
- Sports Riding a bike, physical training, alpine skiing.
- Artistic Music, guitar playing.
- Divers interests Chess, board games, television series, movies, various documentaries.