

# HANNELI TAVANTE

 [github.com/hannelita](https://github.com/hannelita)  [hannelita.com](https://hannelita.com)  [hannelita@gmail.com](mailto:hannelita@gmail.com)  Montréal, QC, Canada

*10+ years of software engineering, backend development, databases, cloud solutions and data engineering.  
Programming Languages expertise - C++, Ruby, Java, Python, Haskell, Rust.*

## EDUCATION

<b>McGill University (Canada)</b>	<i>Graduate Student (MSc) - Computer Science</i>	<i>2020-2022</i>
Thesis: <i>A Type-safe HDL Verified in Coq</i>		
<b>Universidade Federal de Itajubá (Brazil)</b>	<i>Master's Degree - Electrical Engineering</i>	<i>2018 - 2019</i>
Thesis: <i>A Haskell Implementation of THTA - Functional Programming Applied to Electrical Engineering</i>		
<b>Universidade Federal de Itajubá (Brazil)</b>	<i>Bachelor's Degree - Computer Engineering</i>	<i>2007 - 2011</i>

## KEYWORDS

**Software Development, Cloud Solutions, Software Engineering, Algorithms, Formal Verification, Static Analysis, Data Engineering, Leadership, Community Management.**

## INDUSTRY EXPERIENCE

<b>Nasdaq - Lead Software Engineer - SRE</b>	<i>June 2023 - present</i>
- Cloud and Architecture projects. Google Cloud Platform, Gemini and VertexAI, Software Architecture.	
<b>Intel - <i>Compilers and Tools Engineer</i></b>	<i>May 2022 (Grad Intern) - Oct 2022 - present</i>
- Tools for p4 programs; automatic test generation tool in C++ with SMT Solvers (Z3). - Algorithms for program path exploration strategies.	
<b>Independent Senior Consultant</b>	<i>Aug 2017 - Apr 2022</i>
- Short-term contracts for multiple worldwide startups. - Build APIs, Big Data, NoSQL, Data Science, Data Engineering, devops. - Functional Programming and Machine Learning projects. - Selected projects and customers: ECoStage and IEMA (2018), ETS (2019), Quanto (2019), Datopian and CKAN (2020), GSquad/Mission (2021).	
<b>Codeminor42 - Senior Developer and Team Leader</b>	<i>June 2014 - Apr 2017</i>
- Manage and organise worldwide teams, helping them with technical issues. - Main consulting areas: data analysis, data engineering, integration, database connectors, management of frameworks and libraries, implementation of performance tests, devops.	
<b>Red Hat - Middleware Consultant</b>	<i>Oct 2013 - May 2014</i>
- Customer relations, propose middleware Java solutions. Propose and manage workshops about Red Hat products for customers and co-workers. - Understand and interact with sales and business environment, revise sales proposals and solutions.	
<b>Top Free Games - Developer</b>	<i>Nov 2012 - Oct 2013</i>
- Build cloud solutions with Heroku and Amazon AWS to increase backend systems performance. Monitor systems availability and performance, create auto-scalable systems, collect and analyze real time data with Cassandra, Kafka and Hadoop. Develop native apps for iOS.	
<b>Caelum - Developer and Instructor</b>	<i>Aug 2011 - Oct 2012</i>
- Provide training sessions for in-company's training programs. Assist the students continuously, providing them with information about the IT career and best architecture practices. - Develop new training programs and improve the existing ones.	
<b>SOA—Expert - Intern and Developer</b>	<i>Feb 2011 - Jul 2011</i>
- Propose and build internal system architectures. - SOA consulting, enterprise integration solutions.	

## RESEARCH AND DEVELOPMENT EXPERIENCE

---

**McGill University - *Integrated Microsystems Laboratory*** *June 2021 - present*  
Contributions: start a new research project focusing on formal verification of circuits using the Coq proof assistant. Discuss other existing strategies for formal verification of circuits (i.e. SMT solvers); compare existing HLS solutions; integrate results with ongoing Assertion Based Verification projects.

**McGill University - *Learn-OCaml Project*** *Jan 2020 - Apr 2021*  
Contribution: Data collection and data analysis of online programming environments in functional programming.

**Universidade Federal de Itajubá - *aPTIs-SG2 - Smart Grids Laboratory*** *Feb 2018 - Dec 2019*  
Contribution: Implement reliable solutions for electromagnetic transient analysis algorithms.

**Universidade Federal de Itajubá - *Secure Cloud*** *Mar 2018 - Apr 2019*  
Contribution: International Research Project (Europe and Brazil) about secure private cloud environments. Contributions: Migrate and optimize legacy FORTRAN systems, communicate results to the international and distributed team.

## TEACHING EXPERIENCE

---

**Dawson College - *Part-time Faculty - Computer Science*** *2022 - Present*  
Lecturer - CS courses.

**McGill University - *Teaching Assistant for CS Courses*** *2020 - 2021*  
TA for Principles of Programming Languages (Undergraduate) and Data Science (Graduate) courses.

**Universidade Federal de Itajubá - *Lecturer for extension courses*** *2018 - 2019*  
Non-credit courses for undergraduates. Taught Deep Learning, Functional Programming and Python courses.

## SUPERVISORY AND MENTORING EXPERIENCE

---


**Universidade Federal de Itajubá - *Co-supervision of Senior Undergraduate Thesis and Summer Research Projects***  
*2018 - 2019*

- "Formal Verification with SMT Solvers for Games"
- "A study on non-relational databases for time series"
- "Short-term Power Load Forecasting with Neural Networks"
- "Intrusion Detection with Deep Learning Techniques"
- Co-supervised experiments of one undergraduate student in replicating Malware detection using Deep Learning Techniques for different datasets.

## COMPLEMENTARY PROJECTS/ VOLUNTEERING

---

### **Academic Conferences, committees and societies**

- Volunteer in Programming Languages Academic Conferences (SIGPLAN): POPL'23, SPLASH'22 (Virtual), ICFP'22 (Virtual) POPL'22 (Virtual), CAV'21 (Virtual), SPLASH'21 (Virtual), CAV'21 (Virtual), PLDI'21 (Virtual), <Programming>'21 (Virtual), ICFP'19, ECOOP'19, POPL'19
- Open Source Software contributor to Ruby, Java, JBoss, Neo4j, Cassandra.
  - Speaker in worldwide [conferences](#) 
  - Meetup organizer - Founder of Rust User Group São Paulo (2015-2017); Organizer of Neo4j São Paulo users (2014-2017), Cassandra Users São Paulo (2015-2017)

## LANGUAGES

---

- Portuguese (Native), English (C1), French (B2), German (A1), Spanish (A1)

## ADDITIONAL INFORMATION

---

- [Complete CV](#) - includes publications, mentoring and detailed teaching experience.