Hanneli Tavante

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Education

McGill University	Montréal, QC
Graduate Student (MSc) - Computer Science	2020-2022(expected)
Universidade Federal de Itajubá	Itajubá, MG
Master's Degree - Electrical Engineering	2018 - 2019
Bachelor - Computer Engineering	2007 - 2011

Summary and Interests

Software developer with 10+ years of experience in Software Engineering, web development and public speaking. Graduate student at McGill University.

Topics of interest:

- Functional programming, Programming Languages, metaprogramming, proof assistants, Type Theory, Hardware Verification
- Applied Mathematics, Signal Processing, Control systems, Robotics, Data Science, Machine Learning

Industry Experience - LinkedIn: http://br.linkedin.com/in/hannelita

Aug 2017 - present   **Independent Senior Consultant - short term contracts**

- Build APIs, Big Data, NoSQL, Data Science, Data Engineering, Devops
- Functional Programming and Machine Learning projects.

June 2014 - Apr 2017   **Senior Developer and Team Leader at Codeminer42**

- 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.

Oct. 2013 - May 2014   **Middleware Consultant at Red Hat**

- Deal with the customers and 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.

Nov.2012 - Oct. 2013   **Developer at Top Free Games**

- 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 client apps for iOS.

Aug.2011 - Oct. 2012   **Developer and Instructor at Caelum**

- Provide training sessions as an instructor for 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.

Feb. 2011 - Jul. 2011   **Developer at SOA|Expert**

- Propose and build internal system architectures.
- SOA consulting, enterprise integration solutions.

Jan. 2010 - Jan. 2011   **Intern/Developer at B2ML Systems**

- Java (frontend and backend).
- Optimise systems performance, increase team productivity with new frameworks and tools.

Research Experience

June 2021 - present   **McGill University**

- Integrated Microsystems Laboratory. 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. PI/Supervisor: Prof. Zeljko Zilic.

Jan 2020 - Apr 2021   **McGill University**

- Learn-OCaml (https://github.com/ocaml-sf/learn-ocaml) - Data collection and data analysis of online programming environments in functional programming. Publication: "Data Collection for the Learn-OCaml Programming Platform: Modelling How Students Develop Typed Functional Programs" - SIGCSE'21 Poster - ACM. PI: Prof. Brigitte Pientka.

Fev 2018 - Dec 2019   **Universidade Federal de Itajubá**

- aPTIs-SG2 - Smart Grids laboratory. Contribution: Implement reliable solutions for electromagnetic transient analysis algorithms. Publication: "Open Source Implementations of Electromagnetic Transient Algorithms" - INDUSCON 2018 - IEEE. PI/Supervisor: Prof. Benedito Bonatto.

Mar 2018 - Apr 2019   **Universidade Federal de Itajubá**

- Secure Cloud - 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. PI/Supervisor: Prof. Maurilio Coutinho.

2011   **Universidade Federal de Itajubá**

- PET Elétrica. Contribution: An analysis of emerging social networks in business domains. Publication: "Web social networks meters and business usage analysis" - CASoN 2011 - IEEE. PI: Prof. Maurilio Coutinho.

Apr 2007 - Dec 2008   **Universidade Federal de Itajubá**

- Uai!rrior Robotics team - Electronics development team. Circuits design and optimization. PI: Prof. Tales Pimenta.

Teaching Experience

2020-present   **McGill University**

- Teaching Assistant for COMP 598 (Data Science) - Fall 2021;
- Teaching Assistant for COMP302 (Principles of Programming Languages) - Winter 2021;
- Teaching Assistant for COMP302 (Principles of Programming Languages) - Fall 2020;
- Teaching Assistant for COMP302 (Principles of Programming Languages) - Winter 2020;

2018-2019   **Universidade Federal de Itajubá (UNIFEI)**

- Teaching Assistant - Deep Learning extension course (lecture sample);
- Teaching Assistant - Python extension course;
- Teaching Assistant - Functional Programming extension course

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Complementary Projects/ Volunteering

Academic Conferences and committees

- Student volunteer co-captain for ICFP'21, POPL'21, ICFP'20, POPL'20
- ICFP'21 and CAV'21 Virtualization Committee
- Student volunteer at <Programming> '21, PLDI'21, CAV'21, SPLASH'21, POPL'19, ECOOP'19 and ICFP'19.

Industry

- Open Source Software contributor to Ruby, Java, JBoss, Neo4j, Cassandra.
- Speaker in many conferences [http://hannelita.com/conferences/] (Brazil, USA, Europe, Argentina and Canada).
- Cassandra MVP 2015, 2016.

Certifications, courses, workshops and Summer schools

Machine Learning (Coursera)	2016
Introduction to Mathematical Thinking - Coursera (Stanford)	April, 2015
OCJP - Oracle Certified Java Programmer for Java 6	October, 2010

- Summer Schools: PLISS'19 and OPLSS'19
- Workshops: PLMW'18 (at ICFP'18), PLMW'21 (at PLDI'21)

Extra info

  - Github - https://github.com/hannelita
  - Slides - https://slides.com/hannelitavante-hannelita
  - Languages: Portuguese [native], English [C1]; French [B2]; German[A1]; Spanish [A2]

Publications

1. Towards an Incremental Dataset of Proofs - Human Aspects of Types and Reasoning Assistants (HATRA) 2021 (co-located with SPLASH'21)
2. A Data-centered User Study for jsCoq - ML Workshop 2021 (co-located with ICFP'21)
3. A Data-Centered User Study for Proof Assistant Tools - Psychology of Programming Interest Group (PPIG) - 2021 Edition
4. Data Collection for the Learn-OCaml Programming Platform: Modelling How Students Develop Typed Functional Programs - SIGCSE'21
5. Open Source Implementations of Electromagnetic Transient Algorithms - IEEE International Conference on Industry Applications (INDUSCON)
6. Web social networks meters and business usage analysis - 2011 International Conference on Computational Aspects of Social Networks (CASoN)