Luisa Rojas

MSc Computer Science Student

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EDUCATION

MSc Computer Science at University of Ontario Institute of Technology

September 2017 - Graduating August 2019

csci6100g - advanced topics in software design | csci5010g - survey of computer science research topics and methods | mcsc6230g - machine learning

BSc Computer Science (Honours) at University of Ontario Institute of Technology

September 2013 - April 2017

csci3030u - database systems and concepts | csci4030u - big data analytics | csci4020u - compilers | csci3020u - operating systems | csci2040u - software design and analysis | csci3070u - design and analysis of algorithms | csci3230u - web application development | csci4100u - mobile devices

SKILLS

Web Development — *Master*

html | css | javascript | jquery | nodejs

Database Management — *Master*

sql | nosql

Machine Learning — *Intermediate*

tensorflow | keras

Mobile Development — *Intermediate*

android - java | swift

Master

c | c# | c++ | python | java

WORK EXPERIENCE

Graduate Teaching Assistant at University of Ontario Institute of Technology, Faculty of Science

September 2017 - December 2017

A first intensive course on computer programming that covers both theory and practice. The lectures introduce modern concepts in program design and construction along with features of modern object-oriented programming languages. The laboratories provide an opportunity to apply these concepts to practical programming problems. Topics that are covered in this course include program design, problem solving strategies, program documentation, memory management and object-oriented program design.

Undergraduate Teaching Assistant at University of Ontario Institute of Technology, Faculty of Science

January 2017 - April 2017

A second intensive course on programming with C++ that covers more advanced theory and practice. The lectures introduce modern concepts in program design and construction for larger scale programs and the laboratories provide an opportunity to apply these concepts. Topics that are covered in this course include advanced program design, design patterns, program refactoring, templates and standard template libraries, data structures, debugging and version control.

System Administrator at University of Ontario Institute of Technology, International Office

September 2014 - December 2014

The International Office, within the Office of the Vice-President, Research, Innovation and International, provides overall co-ordination of internationalization at UOIT, including strategic planning, faculty engagement and policy development. Operationally, the International office provides support for student exchange, visiting scholars, faculty mobility, and international partnership and program development.

- Elaboration of invitation letters for international visiting scholars interested in conducting research at the university.
- Creation and administration of forms for international visitors (scholars, delegations, partners), international, exchange, Science Without Borders students, among others.
- Control of the International webpages under the UOIT website.

PROJECTS

Distracted Driver Detection

December 2017

Given a dataset of images of drivers, the objective of this work was to successfully predict the likelihood of the driver's actions in each of the pictures. The dataset, provided by State Farm through Kaggle, consisted of a set of images, each taken in a car where the driver is doing some action (e.g. texting, talking on the phone, drinking from a cup). To achieve this, we used various data augmentation approaches, and a Convolutional Neural Network with transfer learning from the popular (pre-trained) VGG16 model.

Generating English Sentences

December 2017

Using Long Short-Term Memory Networks, and a literature novel to train it, I created a network that is able to the grammatical structure of the English language. As a result, and after enough traning, this model, could produce a sequence of words resembling a coherent English sentence.

Threaded Paws

October 2017

Designed and developed a serious game that can assist students in learning and understanding different concurrency concepts that can be problematic and hard to grasp by using a different approach.

Threaded Paws is the first serious game targeting concurrency that we are aware of. There are very few game-based tools that focus on advanced programming concepts available. That being the case, Threaded Paws could set path and serve as guide for more games focused on complex topics in Computer Science to be developed in the future.

Parallel Genetic Algorithms

April 2017

Starting with a sequential implementation, it is mapped over to a serial implementation in C or Java, and finally paralleling it using pthreads/java-concurrency. Run times between the sequential and parallelized program(s) are compared and analyzed.

dynOBD

December 2016

Android application to keep track of statistics about any given car trip. It uses Bluetooth to connect to an OBDII (On-Board Diagnostics) device that is connected by the user to the car's DLC (Data Link Connector). It also provides a live data feed showing the current speed and throttle of the car.

Graphizzer

December 2016

Web-based application that, using the popular DOT notation, generates an accurate visualization by retrieving its image using the imgur API.

CPU Capacity Comparisson

April 2015

Determined the optimal amount of threads for specific mathematical calculations in relation to the number of iterations, magnitude of estimation error and CPU capacity.

POSTERS

Threaded Paws

November 2017

Luisa Rojas-Garcia, Jeremy S. Bradbury, Michael A. Miljanovic. *Threaded Paws: A Serious Game for Learning the Pitfalls of Concurrent Programming* . Poster presented at: CASCON Technology Expo. 27th Annual International Conference on Computer Science and Software Engineering; 2017 November 6; Markham, Ontario, Canada.

EXTRACURRICULAR ACTIVITIES

Local Hack Day Mentor and Judge at University of Ontario Institute of Technology

December 2017

MLH Local Hack Day is a 12 hour hack day on your school's campus that brings together the local hacker community to celebrate building awesome technology.
As a mentor, I had the opportunity to offer support to the hackers in terms of ideas, development workflow, programming languages, and useful APIs.
Then, I joined the judge pannel to choose the top 3 hacks, taking different aspects into account, such as creativity, applicability, and learning outcomes.

Program Representative - Computer Science at UOIT Graduate Student Council

September 2017 - Present

The Graduate Student Council (GSC) is a platform where graduate students' concerns are heard by faculty representatives. The council ensures that the university is aware of the concerns of graduate students and advocates for resolutions and changes where applicable. The GSC is a division of the Student Association at UOIT and is represented by the president on the Board of Directors for the Student Association at UOIT.

Founding Chair at UOIT ACM-W Student Chapter

September 2016 - December 2016

Principal officer; responsible for leading the Chapter and managing its activities in accordance with the mission of ACM-W, the policies and procedures of the ACM. Presides at all meetings of the Chapter and prepares the Chapter's final report each year.

Secretary at ASME UOIT Chapter

September 2015 - April 2016

- Manage all general and executive meetings logistics, attend and record minutes.
- Direct activities related to annual events on and off campus.
- Maintain club documents and records.
- Create and manage the club website.

Webmaster and Social Media Director at ASME UOIT Chapter

September 2014 - August 2015

LANGUAGES (3)

English
Fluent

Spanish
Native speaker

French
Intermediate