

PAOLA CASCANTE-BONILLA

Rice Hall 430, 85 Engineer's Way, Charlottesville, VA 22903 | +1(434)282-9540 | pc9za@virginia.edu

SUMMARY

I am a Ph.D. student of Computer Science at the University of Virginia. My research relies on the intersection between Computer Vision and Natural Language Processing. I am particularly interested on analyzing and applying algorithms to understand how images and text can model complex patterns related to human interactions and their potential effects on everyday life. More recently, I've been focused on interactive learning, semi-supervised learning, and large-scale recognition with fewer labels. Previously I spent 10 years working as a Software Engineer at different Tech Companies.

EDUCATION

Aug 2018 – present	Ph.D. in Computer Science, <i>University of Virginia</i> . Charlottesville, Virginia, USA.
2002-2007 / 2016-2018	B.Sc in Computer Engineering, <i>Tecnológico de Costa Rica</i> . Cartago, Costa Rica.

PRE-PRINTS

Moviescope: Large-scale Analysis of Movies using Multiple Modalities.
Paola Cascante-Bonilla, Kalpathy Sitaraman, Mengjia Luo, Vicente Ordonez.
arXiv:1908.03180. August 2019. <https://arxiv.org/abs/1908.03180>
Media coverage: <https://techxplore.com/news/2019-08-features-movie-genre.html>

PUBLICATIONS

Curriculum Labeling: Revisiting Pseudo-Labeling for Semi-Supervised Learning.
Paola Cascante-Bonilla, Fuwen Tan, Yanjun Qi, Vicente Ordonez.
The 35th AAAI Conference on Artificial Intelligence. AAAI 2021.

Drill-down: Interactive Retrieval of Complex Scenes using Natural Language Queries.
Fuwen Tan, Paola Cascante-Bonilla, Xiaoxiao Guo, Hui Wu, Song Feng, Vicente Ordonez.
Conf. on Neural Information Processing Systems. NeurIPS 2019. Vancouver, Canada. December 2019.

Chat-crowd: A Dialog-based Platform for Visual Layout Composition.
Paola Cascante-Bonilla, Xuwang Yin, Vicente Ordonez, Song Feng. North American Chapter of the Association for Computational Linguistics. NAACL 2019. System Demonstrations. Minneapolis, Minnesota. June 2019.

RELEVANT GRADUATE COURSEWORK

Deep Learning for Visual Recognition (CS 6501-004) – Grade: A+

Project: *Semi Supervised Learning*

Semi-Supervised Learning (SSL) methods are used to achieve a faster, better, and cheaper solution to learn from large amounts of unannotated data and a restrictive amount of labeled data. In this work we present an intuitive yet effective approach tested on standard SSL benchmarks.

Natural Language Processing (CS 6501-005) – Grade: A+

Project: *Variational Image Captioning Using Deterministic Attention*

Traditional image captioning models are generally incapable of generating rich contextual captions. This project presents a novel approach to generate diverse and novel captions from images using Deep Learning models that takes advantage of deterministic attention and Conditional Variational Auto-Encoders.

Machine Learning (CS 6316) – Grade: A

Project: *Paper reproduction - Selection via Proxy: Efficient Data Selection for Deep Learning. ICLR 2020*

Training large models with huge amounts of data can be time consuming and prohibitively expensive. The idea behind this paper is to select a subset of training data to achieve faster training without losing predictive performance. The idea behind this project was to implement the proposed algorithm from scratch to validate and test the results found by the authors.

Internet of Trillion of Things (CS 6501-004) – Grade: A

Project: *Voice Recognition using Deep Learning on the Edge*

Hands-on project for gender voice recognition on smart devices using Support Vector Machines. A development board equipped with an ESP32 microcontroller, a Spartan-6 FPGA and a microphone array were used for this project.

Cloud Computing (CS 6501-001) – Grade: A

Project: *Speech-to-text for Sentiment Analysis*

Hands-on project for real-time speech-to-text recognition and sentiment analysis using diverse framework solutions from different cloud vendors. Additional mood detection was processed on the edge using Machine Learning algorithms.

Computer Science Perspectives (CS 6190) – Grade: A

Worked simultaneously in two research projects that included analysis of data using multiple modalities, and detecting misleading correlations between text and images.

WORK EXPERIENCE

December 2012 – Senior Software Engineer/Tech Lead, *N3 Results*

July 2018

In charge of the Microsoft Platform Ready Platform, an application readiness and validation compliance with certification requirements for most of the Microsoft technologies. Worked mainly with C#, WCF, SQL, MVC and JavaScript. Also worked on Data Mining.

February 2010 – Mid Software Engineer, *Growth Acceleration Partners*

October 2012

.NET team: Back-end developer, worked with C#, ASP, MVC, WCF, REST-SOAP, NoSQL, (Cassandra, Thrift, Lucandra, Phelps) and MS SQL 2008.

Mobile team: worked with Android, iOS and RIM (Blackberry).

- November 2009 – February 2010 **Software Engineer, Intel**
Worked as a Contractor giving support in 2 projects. Worked with WPF, WCF, Microsoft Visual Studio 2008 (C#, ASP), Oracle, MS SSQL 2008 and Infragistics.
- July 2008 – November 2009 **Software Engineer, Exactus Costa Rica, Softland Latinoamerica**
Core developer in the department of Technology and Investigation. Worked with Microsoft CRM 3.0 and 4.0, Microsoft Visual Studio 2003, 2005 and 2008 (C#, ASP), Sql Server 2005, Oracle, Centura, XML, HTML, JavaScript, Exactus ERP.
- May 2007 – July 2008 **System Analyst, Instituto Tecnológico de Costa Rica**
Developer in “Planilla Presupuestaria” (Payment System) project using ASP.NET, C#, HTML, JavaScript, AJAX, SQL Server, Microsoft Visual SourceSafe. Analyst / Developer in “Financiamiento a Estudiantes del ITCR” (Financial Aid for University Students System)

REFERENCES

Vicente Ordonez Roman
Assistant Professor
Department of Computer Science
University of Virginia
vicente@virginia.edu
Phone: +1.631.413.7794

YanJun Qi
Associate Professor
Department of Computer Science
University of Virginia
yq2h@virginia.edu
Phone: +1.434.243.3089

Song Feng
Research Staff Member
IBM Research
sfeng@us.ibm.com
Phone: +1.914.945.1358