

Vicente Ordóñez-Román (publishes as Vicente Ordonez)

CONTACT INFORMATION	85 Engineer's Way Rice Hall 310, PO Box 400740 Charlottesville, VA 22904	vicente@virginia.edu Phone: (631) 413-7794 http://vicenteordonez.com
RESEARCH INTERESTS	My research lies at the intersection of Computer Vision, Natural Language Processing and Machine Learning. I am especially interested in analyzing, and mining useful human insights from enormous amounts of images with associated text to improve visual recognition. I am also interested in building efficient visual recognition models that can perform high-level perceptual tasks for applications in social media, urban computing, and everyday activities. More recently, I am also involved in research on fairness and accountability in machine learning applications.	
CURRENT POSITION	Assistant Professor University of Virginia (UVA) , Charlottesville, Virginia. Department of Computer Science, School of Engineering and Applied Science. I am leading a new UVA Computer Vision group.	2016 - present
EDUCATION	The University of North Carolina at Chapel Hill (UNC) Doctor of Philosophy in Computer Science Thesis: Language and Perceptual Categorization in Computational Visual Recognition Committee: Tamara L. Berg (advisor), Alexander C. Berg, Jan-Michael Frahm, Yejin Choi (University of Washington), Alexei A. Efros (UC Berkeley)	2013 - 2015
	Stony Brook University, The State University of New York (SUNY) Master of Science in Computer Science	2009 - 2013
	Escuela Superior Politécnica del Litoral (ESPOL) , Ecuador. Computer Engineering Degree (GPA: 9.22/10.0)	2003 - 2008
AWARDS	Google Faculty Research Award 2017. IBM Faculty Award 2017. Best Long Paper Award, 2017. <ul style="list-style-type: none">• Intl. Conf. on Empirical Methods in Natural Language Processing (EMNLP), 2017. Research Highlight of the Communications of the ACM, March 2016 Issue. Allen Institute for Artificial Intelligence Hackathon 2015 – <i>Peer Favorite Award</i> . Best Paper Award – IEEE Marr Prize 2013. <ul style="list-style-type: none">• International Conference on Computer Vision (ICCV), 2013. Yahoo! Key Scientific Challenges Award, 2012. Renaissance Technologies Fellowship, 2009 - 2011. Philanthropic Society Medal, Guayaquil, Ecuador, 2007. Top GPA in the Computer Engineering Program, ESPOL, 2004 - 2007.	
PREVIOUS EXPERIENCE	Allen Institute for Artificial Intelligence (AI2) , Seattle, Washington. <i>Visiting Research Fellow in the Computer Vision Group (now PRIOR)</i> I worked at the intersection of Vision and Language in the Computer Vision group led by Prof. Ali Farhadi at the Allen Institute (AI2).	2015 - 2016

Microsoft Research, Cambridge, Massachusetts. Summer 2014
Research Intern in the Computer Vision Group
Large scale data-driven scene parsing using deep learning features.
I was fortunate to work with Ce Liu and Michael Rubinstein.

eBay Research Labs, San Jose, California. Summer 2013
Research Intern in the Computer Vision Group
Worked on attribute predictions on catalog image and text collections
in the Mantis Computer Vision group. My mentors were
Robinson Piramuthu and Vignesh Jagadeesh.

Google, Mountain View, California. Summer 2011
Software Engineering Intern in the Android Multimedia Content Analysis Group
Automatic organization of personal image collections using visual features.
This work later evolved into the Google+ Beautiful Movies made Auto Awesomely.
My mentors were Rodrigo Carceroni and Wei Hua.

Google, Mountain View, California. Spring 2008, Summer 2008
Software Engineering Intern in Google Earth
Developed code for automated quality analysis of satellite images
in the imagery database group for Google Earth and Google Maps.
My mentor was Rodrigo Carceroni.

ACADEMIC EXPERIENCE

The University of North Carolina at Chapel Hill 2013 - 2015
Research Assistant at the Computer Science Department
Performed research in visually grounded language and extracting visual meaning
from large scale noisy collections of text and images. I worked with my advisor
Prof. Tamara L. Berg and Prof. Alexander C. Berg.

Stony Brook University (SUNY), Stony Brook, New York. 2010 - 2013
Research Assistant at the Vision and Digital Media Lab
Large scale analysis of text and images, large scale image classification,
language generation and eye gaze data analysis. I was part of the research group
of Prof. Tamara L. Berg and also collaborated with Prof. Yejin Choi.

Center for Information Technologies (ESPOL), Guayaquil, Ecuador. 2006 - 2009
Research Assistant at the Technology Enhanced Learning Group
Worked on e-learning and document retrieval under Prof. Xavier Ochoa
and also collaborated briefly with Prof. Erik Duval (KU Leuven)

PREPRINTS

Adversarial Removal of Gender from Deep Image Representations.
Tianlu Wang, Jieyu Zhao, Mark Yatskar, Kai-Wei Chang, Vicente Ordonez.
arXiv:1811.08489. November 2018.
<https://arxiv.org/abs/1811.08489>

Text2Scene: Generating Abstract Scenes from Textual Descriptions.
Fuwen Tan, Song Feng, Vicente Ordonez.
arXiv:1809.01110. September 2018.
<https://arxiv.org/abs/1809.01110>

PUBLICATIONS

Enabling AI at the edge with XNOR Networks.

Mohammad Rastegari, Vicente Ordonez, Joseph Redmon, Ali Farhadi.
Communications of the ACM: Research Highlights. [CACM](#) [To Appear].
([Research Highlight](#), [Invited Paper](#))

Deep Feature Aggregation and Image Re-ranking with Heat Diffusion for Image Retrieval.
Shanmin Pang, Jin Ma, Jianru Xue, Jihua Zhu, Vicente Ordonez.
[IEEE Transactions on Multimedia](#). Accepted October 2018 [To Appear]. ([Journal Paper](#))

Feedback-prop: Convolutional Neural Network Inference under Partial Evidence.
Tianlu Wang, Kota Yamaguchi, Vicente Ordonez.
Int. Conf. on Computer Vision and Pattern Recognition. [CVPR 2018](#).
Salt Lake City, Utah.

Gender Bias in Coreference Resolution: Evaluation and Debiasing Methods.
Jieyu Zhao, Tianlu Wang, Mark Yatskar, Vicente Ordonez, Kai-Wei Chang.
North American Chapter of the Association for Computational Linguistics. [NAACL 2018](#).
short. New Orleans, Louisiana.

Building Discriminative CNN Image Representations for Object Retrieval using the Replicator Equation. Shanmin Pang, Jihua Zhu, Jiaying Wang, Vicente Ordonez, Jianru Xue.
[Pattern Recognition 2018](#). Volume 83. Pages 150-160. Accepted April 2018. ([Journal Paper](#))

Where and Who? Automatic Semantic-Aware Person Composition.
Fuwen Tan, Crispin Bernier, Benjamin Cohen, Vicente Ordonez, Connelly Barnes.
Winter Conference on Applications of Computer Vision [WACV 2018](#).
Lake Tahoe, NV.

Men Also Like Shopping: Reducing Gender Bias Amplification using Corpus-level Constraints . Jieyu Zhao, Tianlu Wang, Mark Yatskar, Vicente Ordonez, Kai-Wei Chang.
Empirical Methods on Natural Language Processing. [EMNLP 2017](#).
Copenhagen, Denmark. ([Oral Presentation](#)) ([Best Paper Award](#))

Obj2Text: Generating Visually Descriptive Language from Object Layouts .
Xu Wang Yin, Vicente Ordonez.
Empirical Methods on Natural Language Processing. [EMNLP 2017](#).
Copenhagen, Denmark. ([Oral Presentation](#))

Commonly Uncommon: Semantic Sparsity in Situation Recognition.
Mark Yatskar, Vicente Ordonez, Luke Zettlemoyer, Ali Farhadi.
Int. Conf. on Computer Vision and Pattern Recognition. [CVPR 2017](#).
Honolulu, Hawaii.

XNOR-Net: ImageNet Classification Using Binary Convolutional Neural Networks.
Mohammad Rastegari, Vicente Ordonez, Joseph Redmon, Ali Farhadi.
European Conference on Computer Vision. [ECCV 2016](#). Amsterdam, Netherlands.
([Oral presentation](#))

Stating the Obvious: Extracting Visual Common Sense Knowledge.
Mark Yatskar, Vicente Ordonez, Ali Farhadi. North American Chapter of the Association
of Computational Linguistics. [NAACL 2016](#). short. San Diego, CA
([Oral presentation](#))

Learning to Name Objects.

Vicente Ordonez, Wei Liu, Jia Deng, Yejin Choi, Alexander C. Berg, Tamara L. Berg.
Communications of the ACM. March 2016. Vol 59, No. 3. [CACM 2016](#).

([Research Highlight, Invited Paper](#))

Large Scale Retrieval and Generation of Image Descriptions.

V. Ordonez, X. Han, P. Kuznetsova, G. Kulkarni, M. Mitchell, K. Yamaguchi, K. Stratos, A. Goyal, J. Dodge, A. Mensch, H. Daume III, A.C. Berg, Y. Choi, T.L. Berg.

International Journal of Computer Vision. Special Issue on Big Data. [IJCV 2016](#).

([Journal Paper](#))

Predicting Entry-Level Categories.

Vicente Ordonez, Wei Liu, Jia Deng, Yejin Choi, Alexander C. Berg, Tamara L. Berg.
International Journal of Computer Vision - Marr Prize Special Issue. [IJCV 2015](#).

([Journal Paper](#))

ReferitGame: Referring to Objects in Photographs of Natural Scenes.

Sahar Kazemzadeh, Vicente Ordonez, Mark Matten, Tamara L. Berg
Empirical Methods on Natural Language Processing. [EMNLP 2014](#). Doha, Qatar.

([Oral presentation](#))

Learning High-level Judgments of Urban Perception.

Vicente Ordonez, Tamara L. Berg
European Conference on Computer Vision. [ECCV 2014](#).
Zurich, Switzerland.

TreeTalk: Composition and Compression of Trees for Image Descriptions.

Polina Kuznetsova, Vicente Ordonez, Tamara L. Berg, Yejin Choi.
Transactions of the Association of Computational Linguistics. [TACL 2014](#)
Presented at EMNLP 2014. Doha, Qatar.

([Oral Presentation, Journal Paper](#))

FurnitureGeek: Understanding Fine-Grained Furniture Attributes from Freely Associated Text and Tags. Vicente Ordonez, Vignesh Jagadeesh, Wei Di, Anurag Bhardwaj, Robinson Piramuthu. IEEE Winter Conference on Applications of Computer Vision. [WACV 2014](#). Steamboat Springs, CO

From Large Scale Image Categorization to Entry Level Categories.

Vicente Ordonez, Jia Deng, Yejin Choi, Alexander C. Berg, Tamara L. Berg.
IEEE International Conference on Computer Vision. [ICCV 2013](#). Sidney, Australia.

([Oral presentation](#)) (**Best Paper Award - Marr Prize**)

(Selected for publication in the Research Highlights of the Communications of the ACM Magazine)

Generalizing Image Captions for Image-Text Parallel Corpus.

Polina Kuznetsova, Vicente Ordonez, Alexander C. Berg, Tamara L. Berg, Yejin Choi.
Association for Computational Linguistics. [ACL 2013](#). short.
Sofia, Bulgaria.

Babytalk: Understanding and Generating Image Descriptions.

G. Kulkarni, V. Premraj, V. Ordonez, S. Dhar, S. Li, Y. Choi, A. C. Berg, T. L. Berg.
IEEE Transactions on Pattern Analysis and Machine Intelligence. [TPAMI 2013](#).

([Journal paper](#))

Collective Generation of Natural Image Descriptions.
Polina Kuznetsova, Vicente Ordonez, Alexander C. Berg, Tamara L. Berg, Yejin Choi.
Association for Computational Linguistics. [ACL 2012](#). Jeju, South Korea.
(Oral presentation)

Im2Text: Describing Images Using 1 Million Captioned Photographs.
Vicente Ordonez, Girish Kulkarni, Tamara L. Berg.
Neural Information Processing Systems. [NIPS 2011](#). Granada, Spain.
(Spotlight presentation)

High Level Describable Attributes for Predicting Aesthetics and Interestingness.
Sagnik Dhar, Vicente Ordonez, Tamara L. Berg.
IEEE Computer Vision and Pattern Recognition. [CVPR 2011](#).
Colorado Springs, CO.

The Ariadne Infrastructure for Managing and Storing Metadata.
S. Ternier, G. Parra, B. Vandeputte, K. Verbert, J. Klerkx, E. Duval, V. Ordonez, X. Ochoa.
Emerging Internet Technologies and Applications for E-learning.
[IEEE Internet Computing 2009](#).
(Journal paper)

PATENTS

Techniques for automatic photo album generation. Google – Android.
Vicente Ordonez, Wei Hua, Rodrigo L. Carceroni, Jennifer Gillenwater, Amarnag Subramanya. US Patent No. 8983193. (2015).

Correlating image annotations with foreground features. eBay Inc.
Anurag Bhardwaj, Robinson Piramuthu, Vicente Ordonez, Vignesh Jagadeesh, Wei Di.
US Patent Application No. 20150067471. (2015).

MEDIA COVERAGE / PRESS RELEASES

Researchers Combat Gender and Racial Bias in Artificial Intelligence. Bloomberg. 12/04/2017.
<https://www.bloomberg.com/news/articles/2017-12-04/researchers-combat-gender-and-racial-bias-in-artificial-intelligence>

Home robots will turn into crude sexists, experts warn. The Times of London. 08/23/2017.
<https://www.thetimes.co.uk/article/home-robots-will-turn-into-crude-sexists-experts-warn-gnmj09rgq>

Machines Taught by Photos Learn a Sexist View of Women. WIRED. 08/21/2017.
<https://www.wired.com/story/machines-taught-by-photos-learn-a-sexist-view-of-women/>

Beyond Silicon: Squeezing More Out of Chips. The New York Times. 10/30/2016.
<http://www.nytimes.com/2016/10/31/technology/beyond-silicon-squeezing-more-out-of-chips.html>

Artificial Intelligence at Your Fingertips. University of Washington CSE News. 10/30/2016.
<https://news.cs.washington.edu/2016/10/31/uw-cse-and-ai2-in-the-new-york-times-artificial-intelligence-at-your-fingertips/>

A Powerful Legacy and a Bright Future in the Digital Humanities. UVA Today. 10/13/2016.
<https://www.news.virginia.edu/content/powerful-legacy-and-bright-future-digital-humanities>

INVITED TALKS

Invited Speaker: Challenges in Vision and Language Research
Workshop on Shortcomings in Vision and Language (SiVL)
European Conference on Computer Vision (ECCV), Munich, Germany September 2018

Invited Speaker: Feedback Propagation in Deep Neural Networks SAP Leonardo Machine Learning Research Retreat. Munich, Germany	September 2018
Invited Speaker: Overcoming the Next Challenges in Vision and Language Research Microsoft Research Montreal. Montréal, Canada McGill University, Center for Intelligent Machines, Montréal, Canada	August 2018 August 2018
Mini-Plenary Speaker: Reducing Gender Bias in Machine Learning Systems National Center for Women & IT, NCWIT Summit. Grapevine, TX	May 2018
Invited Speaker: Understanding the Visual World through Language Panelist: Bias in Machine Learning Systems Applied Machine Learning Conference. Charlottesville, VA Tom Tom Founders Festival	April 2018
Keynote Speaker: Integrating Vision and Language through Feedback-based Neural Inference Conference on Integrating Vision and Language Processing. Tartu, Estonia European Network on Integrating Vision and Language (iV&L Net)	March 2018
Investigación en Reconocimiento Visual Artificial Universidad Técnica de Machala (UTM), Machala, Ecuador. Universidad de Cuenca (UC), Cuenca, Ecuador.	May 2017 May 2017
Vision, Language and Perception. Digital Humanities Conference at the University of Virginia – DH@UVA	October 2016
Language and Perceptual Categorization in Computer Vision. Toyota Technological Institute at Chicago TTI-C Hosted by Prof. Greg Shakhnarovich. Allen Institute for Artificial Intelligence AI2, Seattle, Washington Hosted by Prof. Ali Farhadi. California Institute of Technology (Caltech), Pasadena, California Hosted by Prof. Pietro Perona. Carnegie Mellon University, The Robotics Institute VASC Seminar Series Hosted by Prof. Abhinav Gupta. Disney Research Pittsburgh, The Walt Disney Company. Hosted by Senior Research Scientist Leonid Sigal. Stanford University, Department of Computer Science, Vision Group. Hosted by Prof. Fei-fei Li.	April 2015 March 2015 March 2015 February 2015 January 2015 December 2014
Integrating Vision and Language. University of Virginia, Computer Science Dept. Charlottesville, Virginia Virginia Tech, Computer Science Dept., Blacksburg, Virginia Drexel University, Computer Science Dept. Philadelphia, Pennsylvania	March 2015 March 2015 February 2015
Learning High-level Judgments of Urban Perception. ECCV 2014 Workshop on Storytelling with Images and Videos. Zurich ECCV 2014 Workshop on Human-Machine Communication for Visual Recognition. Zurich	September 2014

Understanding Image Descriptions in the Wild. July 2013
 Yahoo! Labs, Sunnyvale, California.
 Hosted by Research Scientist Amit Goyal.

Data-driven Generation of Image Descriptions. June 2013
 North American Chapter of the Association for Computational Linguistics (NAACL)
 Workshop on Vision and Language (WVL) 2013. Atlanta, GA

RESEARCH GROUP	Shanmin Pang, <i>Visiting Scholar – Asst. Prof. at Xi'an Jiaotong University</i> Fall 2017 - Fall 2018 Tianlu Wang, <i>PhD Student</i> Fall 2016 - present Ziyang Yang, <i>PhD Student</i> Fall 2017 - present Fuwen Tan, <i>PhD Student</i> Fall 2017 - present Paola Cascante <i>PhD Student – as rotation advisor</i> Fall 2018 - present Xuwang Yin, <i>PhD Student</i> Fall 2016 - Summer 2018 Fengyang Zhang, <i>MSc Student</i> Spring 2018 Abhimanyu Banerjee, <i>MSc Student</i> Spring 2017 - Spring 2018 Anudeep Konda, <i>MSc Student</i> Fall 2017 - Spring 2018 KS Sivaraman, <i>MSc Student</i> Spring 2017 - Fall 2017 Jeffrey Tan, <i>Undergrad Student</i> Summer 2018 - present Lindsey Shavers, <i>Undergrad Student</i> Fall 2018 - present MengJia Luo, <i>Undergrad Student</i> Fall 2018 - present Arun Kannan, <i>Undergrad Student Capstone Project</i> Fall 2017 - Spring 2018 Vijay Edupuganti, <i>Undergrad Student Capstone Project</i> Fall 2017 - Spring 2018 Shijia Wang, <i>Undergrad Student</i> Summer 2017 - Fall 2017 Nova Zhang, <i>Undergrad Student</i> Spring 2017 Divya Bhaskhara, <i>Undergrad Student Capstone Project</i> Fall 2016 Jonathan Rodriguez, <i>CRA-DREU Visting Student – Tufts University</i> Summer 2018 Rosangel Garcia, <i>CRA-DREU Visting Student – Le Moyne College</i> Summers 2017, 2018 Ian K. Torres, <i>CRA-DREU Visting Student – UMass Amherst</i> Summer 2017
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TEACHING
EXPERIENCE

Instructor.

Deep Learning for Visual Recognition. University of Virginia. Spring 2019
 Course website: <http://vicenteordonez.com/deeplearning>
 Graduate Class: 84 students enrolled.

Introduction to Computer Vision. University of Virginia. Spring 2018
 Course website: <http://vicenteordonez.com/vision>
 Undergraduate Class: 78 students (19% women).
 BA/BSc Students majoring in CS/Comp. Eng./Applied Math/Statistics and others.
 Tools Used: Python, Numpy, Pytorch, Google Colaboratory.

Computational Visual Recognition. University of Virginia. Fall 2017
 Course website: <http://www.cs.virginia.edu/~vicente/recognition>
 Graduate Class: 78 students (32% women).
 13 PhD (6 CS + 3 CivilEng + 2 ECE + 1 SysEng + 1 Physics), 31 CS MS, 13 ECE MS, 5 SysEng MS, 3 Data Science MS, 1 Mech&Aerospace ME, 1 MS Chem, 1 MS BioMed, 9 BA/BSc
 Tools Used: Python, Pytorch, Jupyter.

Vision and Language. University of Virginia Spring 2017
 Course website: <http://www.cs.virginia.edu/~vicente/vislang>
 Advanced Graduate Class: 32 students (28% women).
 7 CS PhD, 9 CS MS, 3 SysEng MS, 11 Data Science MS, 2 CS BSc
 Tools Used: Python, Keras, Tensorflow, Pytorch.

Computational Visual Recognition. University of Virginia. Fall 2016
 Course website: <http://www.cs.virginia.edu/~vicente/recognition/2016>
 Graduate Class: 36 students (16% women).
 6 PhD (4 CS + 1 BioMed + 1 Stats), 16 CS MS, 4 MEng, 4 Data Science MS, 6 CS BSc
 Tools Used: Lua, Torch, Python, Keras, Tensorflow.

Teaching Assistant.

Foundations of Computer Science. Stony Brook University. 2009-2010
 Object Oriented Programming. Escuela Superior Politécnica del Litoral, Ecuador. 2005
 Introduction to Programming. Escuela Superior Politécnica del Litoral, Ecuador. 2004
 Physics for Engineering. Escuela Superior Politécnica del Litoral, Ecuador. 2004

Guest Lectures.

Introduction to Computer Vision. University of Virginia February 2017
 Language and Vision. University of North Carolina at Chapel Hill. February 2015
 Computer Vision. University of North Carolina at Chapel Hill. November 2014
 Artificial Intelligence. University of North Carolina at Chapel Hill. January 2014
 Advanced Multimedia. Stony Brook University. April 2013
 Computational Photography. Stony Brook University. March 2013

OTHER
ACTIVITIES

Organizing Committee.

Panel on Bias in Machine Learning at the
 • ACM Richard Tapia Celebration of Diversity in Computing 2018.
BigVision Workshop on Large Scale Visual Recognition and Retrieval at the
 • Conference on Computer Vision and Pattern Recognition (CVPR) 2016.
 University of Virginia's Human and Machine Intelligence Seminar (with Prof. Paul Humphreys)
 University of Virginia's Computer Vision Seminar (with my PhD students)
 Stony Brook University Computer Science Graduate Research Conference 2010

Area Chair / Program Committee / Meta-Reviewer.

North American Chapter of the Association for Computational Linguistics (NAACL) 2019.
 International Conference on Computer Vision (ICCV) 2019.
 North American Chapter of the Association for Computational Linguistics (NAACL) 2018.

Workshop Program Committee / Reviewer.

NIPS Black in AI Workshop 2018
 NAACL Workshop on New Forms of Generalization in Deep Learning 2018
 ICCV Workshop on Closing the Loop Between Vision and Language 2015, 2017
 ICCV Workshop on Web-scale Vision and Social Media 2015, 2017
 NIPS Workshop on Efficient Methods for Deep Neural Networks 2016
 ECCV Workshop on Web-scale Vision and Social Media 2016
 EMNLP Workshop on Vision and Language 2015
 ECCV Workshop on Storytelling with Images and Videos - *VisStory* 2014
 ECCV Workshop on Human-Machine Communication for Visual Recognition 2014

Member of Expert Review Panel.

US National Science Foundation, 2018
 FWO - Flanders Research Foundation, Belgium, 2017

Reviewer / Program Committee

Intl. Conference on Computer Vision and Pattern Recognition (CVPR) 2015 - 2019
European Conference on Computer Vision (ECCV) 2016, 2018
Empirical Methods in Natural Language Processing (EMNLP) 2015, 2017, 2018
Association for Computational Linguistics (ACL) 2014, 2016 - 2018
IEEE Transactions on Pattern Analysis and Machine Intelligence (TPAMI) 2014 - 2018
International Conference on Computer Vision (ICCV) 2015, 2017
International Joint Conference in Artificial Intelligence (IJCAI) 2016
International Journal of Computer Vision (IJCV) 2014 - 2016
Neural Information Processing Systems (NIPS) 2016
Asian Conference on Computer Vision (ACCV) 2016
Int'l Conference on Computer Graphics and Interactive Techniques (SIGGRAPH) 2016
North American Chapter of the Association for Computational Linguistics (NAACL) 2016
IEEE Transactions on Multimedia (TM) 2013, 2016.
Elsevier Computer Vision and Image Understanding (CVIU) 2014, 2015
Elsevier Information Processing Letters (IPL) 2014
IEEE Transactions on Neural Networks and Learning Systems (TNNLS) 2014
IEEE Transactions on Image Processing (TIP) 2013.
ACM Multimedia (MM) 2010. International Multimedia Conference.