ANDRÉS SOLÍS MONTERO

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OVERVIEW

Research scientist
Strong background in Computer Vision and Image Processing applied to shape analysis, object detection and tracking applications. I have research interest in Machine Learning and Deep Learning solutions.

Software Developer
Over 10+ years of experience in software and web development. Particularly interested in Object Oriented Programming languages and scripting solutions. Developer who enjoys simplicity in design, creative code, and innovation. Experienced in C++, Java, Python and Web technologies.

Teaching experience
Teaching Computer Science and Programming Languages for over 5+ years. Has taught over 10 courses.

WORK EXPERIENCE

2016–Present
Tempo Analytics, Canada

Research and Development Software Engineer
Researcher and developer of service tracking software solutions to improve Quick Service Industry front counter performance. Creating machine learning solutions for problems such as people reidentifcation and upper body detections.
Reference: Robert Laganière · +1 (613) 562-5800 x 6707 · robert@laganiere.name

2010–2016
University of Ottawa, Canada

Research Assistant and PhD Candidate
Research on shape analysis, object detection and tracking solutions for augmented reality, robot localization, and surveillance applications. Design, develop, and validation of algorithmic solutions. Responsible for writing up research papers and presenting research findings.
Reference: Jochen Lang · +1 (613) 562-5800 x 6317 · jlang@eecs.uottawa.ca
Reference: Robert Laganière · +1 (613) 562-5800 x 6707 · laganier@eecs.uottawa.ca

2011–2012
Proximify

Senior Web Developer
Design, development, validation and deployment of the javascript template engine powering UniWeb. Create server-client web applications for the UniWeb product (PHP, HTML5, CSS3 and jQuery).
Reference: Diego Macrini +1 (613) 828 6274 · macrini@proximify.ca

2010–2011
Dalen Design

Senior Web Developer
Development and maintenance of e-commerce website: Hot Tub Covers Canada (PHP, MySQL and jQuery).
Reference: Jessica Dalen +1 (613) 421 2686 · jessica@dalendesign.ca

2009–2010
Hegyi Geomatics international Inc

Software Developer
Design and development of tools for the forest industry. Image analysis of forest stands using high resolution imagery (Java, and C++).
Reference: Frank Hegyi +1 (613) 526 9967 · fhegyi@hegyigeomatics.com

2008–2010 *University of* *Ottawa, Canada*	**Research Assistant** Research on image processing techniques to extract relevant features from images. Design, develop, and validation of algorithmic solutions. Responsible for writing up research papers and presenting research findings. Reference: Amiya Nayak · +1 (613) 562 5800 x 2165 · anayak@eecs.uottawa.ca
2006–2008 *Navaera USA* *LLC*	**Software Developer** Development of web and multi-platform tools for automatic clustering of documents from the web based on their content and metadata (Java, C#, and Python). Reference: Matthew Adler · madler@navaera.com
2006–2008 *University of* *Havana, Cuba*	**Network Administrator and Software Developer** Design, development, and validation of network administration tools for user monitoring, domain login, email access, and internet quota management. Provide network support and IT services. Reference: Sofia Sanjuán Gómez · +53 (7) 873 0123 · sanjuan@rect.uh.cu

EDUCATION

2010-2016 *University of* *Ottawa, Canada*	**Doctor of Philosophy in Computer Science** GPA: 10.0/10.0 Thesis: *Efficient Feature extraction for Shape Analysis, Object Detection and Tracking* Robust feature representations to aid shape analysis, object detection and tracking. Supervisors: Prof. Jochen Lang & Prof. Robert Laganière
2009-2010 *University of* *Ottawa, Canada*	**Master of Computer Science** GPA: 10.0/10.0 Thesis: *Towards Feature Detection based on Morphology of Objects on Images* Extracting lines and corners from images based on the morphology of objects. Supervisor: Prof. Amiya Nayak
2001-2006 *University of* *Havana, Cuba*	**Bachelor of Computer Science** GPA: 4.56/5.0 (magna cum laude) Thesis: *Diskless Cluster: Parallel and Distributed Systems* Bootable Cluster LiveCD based on Debian GNU/Linux distribution. Supervisor: Prof. Joel de la Noval

PUBLICATIONS

2016	Matej Kristan, Andrés Solís Montero et al. The Visual Object Tracking VOT2016 Challenge Results. *The European Conference on Computer Vision (ECCV) Workshops*, Springer, 2016.
2016	Matej Kristan, Andrés Solís Montero et al. The Thermal Infrared Visual Object Tracking VOT-TIR2016 Challenge Results. *The European Conference on Computer Vision (ECCV) Workshops*, Springer, 2016.
2015	Andrés Solís Montero, Jochen Lang, Robert Laganire. Scalable Kernel Correlation Filter With Sparse Feature Integration. *The IEEE International Conference on Computer Vision (ICCV 2015), VOT Challenge*, pages 24-31, Dec. 2015.
2015	Matej Kristan, Andrés Solís Montero et al. The Visual Object Tracking VOT2015 Challenge Results. *The IEEE International Conference on Computer Vision (ICCV) Workshops*, pages 1-23, Dec. 2015.

2015   Michael Felsberg, Andrés Solís Montero et al. The Thermal Infrared Visual Object Tracking VOT-TIR2015 Challenge Results. *The IEEE International Conference on Computer Vision (ICCV) Workshops*, pages 76-88, Dec. 2015.

2015   Andrés Solís Montero, Jochen Lang, Robert Laganire. A General Framework for Fast 3D Object Detection and Localization Using an Uncalibrated Camera. *IEEE Winter Conference on Applications of Computer Vision (WACV 2015)*, pages 884-891, Jan. 2015.

2012   Andrés Solís Montero, Hicham Sekkati, Jochen Lang, Robert Laganire, Jeremy James. Framework for Natural Landmark-based Robot Localization. *Proceedings of the 9th International Conference on Computer and Robot Vision (CRV)*, pages 131-138, April 2012.

2012   Andrés Solís Montero, Jochen Lang. Skeleton pruning by contour approximation and the integer medial axis transform. *Computers & Graphics*, 36(5), pages 477-487, March 2012.

2010   Milos Stojmenovic, Andres Solis Montero, Amiya Nayak. Colour and texture based pyramidal image segmentation. *IEEE International Conference on Audio Language and Image Processing (ICALIP)*, pages 778-786, Nov. 2010.

2010   Andres Solis Montero, Milos Stojmenovic, Amiya Nayak. Robust detection of corners and corner-line links in images. *IEEE 10th International Conference on Computer and Information Technology (CIT)*, pages 495-502, Jun. 2010.

2010   Milos Stojmenovic, Andres Solis Montero, Amiya Nayak. Co-parent selection for fast region merging in pyramidal image segmentation. *IEEE 2nd International Conference on Image Processing Theory Tools and Applications (IPTA)*, pages 243-248, July 2010.

2009   Andres Solis Montero, Amiya Nayak, Milos Stojmenovic, Nejib Zaguia. Robust Line Extraction Based on Repeated Segment Directions on Image Contours. *IEEE Symposium: Computational Intelligence for Security and Defence Applications (CISDA)*, pages 1-7, July 2009.

2009   Milos Stojmenovic, Andres Solis Montero, Amiya Nayak. Link Shifting Based Pyramid Segmentation for Elongated Regions. *Signal Processing, Image Processing and Pattern Recognition*, Springer Berlin Heidelberg, pages 141-152, 2009.

TEACHING EXPERIENCE

2009 – 2015
University of Ottawa

Teaching Assistant:

Operative Systems (CSI 3131),	Summer 2015.
Introduction to Computing II (ITI 1121 - Java),	Winter 2014
Introduction to Computing I (ITI 1120 - Java),	Fall 2013.
Introduction to Computing I (ITI 1120 - Python),	Fall 2015.
Advanced Programming Concepts in C++{11} (CSI 2372).	Fall 20{10,12,14}.
Programming Paradigms. (CSI2120),	Winter 20{11,15}.
Computing Concepts for Business (CSI1306 - Guest Lecturer).	Fall 2009.

2006 – 2008	Network Administration in GNU/Linux,	Sept-Nov 20{7,8}
University of Havana	Relational Database Model Concepts,	Sept-Nov 2007
	Object Oriented Programming with Java and C#,	April-June 200{7,8}.
	Microsoft Office Tools (Word, Excel, Access),	April-June 2006

SKILLS & EXPERTISE

Expertise	Computer Vision · Image Processing · Data Structure & Algorithms · Object-Oriented Programming · RDMS (i.e., MSQL, MySQL, Postgres, and SQLite) · Networking · Web Development/Design · e-Commerce · GIS · MVC
Markup and Programming Languages	C++ · C · C# · Java · PHP · Python · Matlab · JavaScript · Prolog · Perl · Bash · JavaScript · Haskel · HTML 5 · XML · CSS 3
Software Development Tools	OpenCV · Eclipse · Visual Studio · Xcode · Git · SVN · make · jQuery · LaTeX · Adobe Photoshop · Adobe Illustrator · Adobe Dreamweaver · OpenOffice · Microsoft Office Tools

HONORS & AWARDS

2016	NSERC Engage Grant Program with Ross Video.
2015	Best real-time tracking method VOT Challenge 2015, Chile
2015	NSERC Engage Grant Program with Thales Canada.
2014	NSERC Engage Grant Program with You.i labs.
2012	NSERC Engage Grant Program with Cohort Systems Inc.
2011	NSERC CRD Grant with Pulse Microsystems Ltd.
2010	International Admission Scholarship from University of Ottawa.
2010	Ontario Centres of Excellence Grant with Hegyi Geomatics International Inc. Project: Green Earth (GIS).
2009	Excellence Scholarship from University of Ottawa.
2009	Ontario Centres of Excellence Grant with Hegyi Geomatics International Inc. Project: Green Earth (GIS).
2009	MITACS Accelerate Internship Program for graduate and postdoctoral fellows. Project: Advanced Tools for Forest Inventory and Management.
2006	Magma cum laude graduate as Bachelor in Computer Science
2004	Creator of "linUHx" GNU/Linux distribution adopted by three Cuban Universities: University of Havana, CUJAE, and UCI.
2004	2nd position at 10th International Convention "Informática 2004, Cuba." Project: Electronic Magazine "E-zines".

TECHNICAL REVIEWS - JOURNALS AND CONFERENCES

IEEE Transactions on Instrumentation & Measurement. TIM 2017.

IEEE Transactions on Instrumentation & Measurement. TIM 2016.

IEEE Transactions on Image Processing. TIP 2015.

IEEE International Conference on Multimedia and Expo. ICME 2013.

IEEE International Conference on Robotics and Automation. ICRA 2013.

IEEE International Conference on Multimedia and Expo. ICME 2012.

IEEE International Conference on Multimedia and Expo. ICME 2011.

7th IEEE International Conference on Mobile Ad-hoc and Sensor Systems. MASS 2010.

ADDITIONAL INFORMATION

Languages ENGLISH : Full professional proficiency

SPANISH : Mothertongue

Affiliations ACM member · IEEE member · International High IQ Society member

Interests & Hobbies Motorcycle Riding · Dancing · Music · Soccer · Volleyball · Skating