ANDRÉS SOLÍS MONTERO

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OVERVIEW

Professional Summary

A creative leader and senior data scientist with a Ph.D. in Computer Science, specializing in Computer Vision, Image Processing, Machine Learning and Deep Learning solutions with a solid mathematical, data management, and analytics background. Published author with over 1000 citations and technical reviewer for over nine years. My experience brings invaluable insight into analyzing, processing, and reporting meaningful reports and decisions and visualizing data. I am a versatile researcher with a broad knowledge of programming languages, databases, and data structures. I have taught courses in computer science, programming languages, and advanced programming concepts for over ten years at the University Level.

Management / Team Lead

Over eight years of management experience and team leader who performs and delegates multiple duties while motivating staff, making sound decisions, and working with managers and staff at all levels of responsibility. Excellent communication skills with a creative mindset. I like encouraging collaborative work environments, stimulating group creativity and promoting knowledge sharing. I have extensive experience delivering technology products from conception to delivery while allocating resources and timelines successfully.

Full-Stack Software Developer & Applied AI & DevOps

Over 15+ years of experience as a full-stack software developer with vast experience in Cyber Security, DevOps, and Cloud Native Solutions. A developer who enjoys simplicity in creative design code with a creative eye for UX and UI design. I am a seasoned programmer with experience in multiple programming paradigms, data structures and algorithms. I have architected, led, and deployed various AI Cloud solutions and products from conception to delivery. I specialized in Computer Vision, Machine Learning, Deep Learning, CNN, Business Analytics, and Information Extraction. I have deployed products with the following tech stack: Python, C++, Java, Web technologies, OAuth, SQL and NoSQL databases, Azure Cloud, Kubernetes, and Containerization (i.e., Docker).

WORK EXPERIENCE

2020–Present
DScD, StatCan, Canada

Lead Data Scientist
Technical Lead of several projects under the Data Science Division / Product Delivery Section for clients such as Public Health Agency of Canada (PHAC), Health Canada (HC), and Statistics Canada (StatCan). Working on product delivery, architecture, production planning, pipelines, data integration, ML modelling, deep learning, and cloud integration (i.e., Kubernetes and Microsoft Azure) for the following projects: Cyclops, COVID-19 PPE - EPI Model, Frontier Counts, SEDAR, and Hydra.

2016–Present
Tempo Analytics, Canada

Co-Founder, CTO, Research & Development
Architect, team technical lead, and full-stack software developer of a server-client application to deliver the speed of service time statistics for the Quick Service Industry. In charge of building Deep Learning Neural Networks (i.e., CNN, and RestNets) and Computer Vision solutions for customer detection, people re-identification, and metric learning. Creating and designing web tools to control the application's nodes features, and display analytics.

2010–2016
University of Ottawa, Canada

Research Assistant, Computer Vision Software Developer
Responsible for writing research papers, presenting research findings, and develop computer vision and machine learning software to test and validate the results. Research on shape analysis, object detection and tracking solutions for augmented reality, robot localization, and surveillance applications.

2011–2012
Proximify

Senior Web Developer
Design and development of a javascript engine powering UniWeb and CCV Sync. Proximify is a web-based software for academic institutions and grant agencies. Envisioning and building a research network tool for creating and maintaining your Canadian Common CVs.

2010–2011
Dalen Design

Web Developer
Development and maintenance of the e-commerce website: Hot Tub Covers Canada. Processing electronic payments, showcasing products, accessories, descriptions, managing reviews and comments.

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 and Landsat imagery (Java, and C++).

2008–2010
University of Ottawa, Canada

Research Assistant, Computer Vision Software Developer
Responsible for writing research papers, presenting research findings, and develop computer vision software to test and validate the results. Research on image processing techniques to extract relevant features from images.

2006–2008
Navaera USA LLC

Software Developer
Creating a web crawler and multi-platform tools for automatic clustering of documents from the web based on their content and metadata (Java, C#, and Python).

2006–2008
University of Havana, Cuba

Network Administrator, Software Developer
IT Team leader for the main building of the University of Havana. Design, development, and validation of network administration tools for user monitoring, domain login, email access, and internet quota management. Provided network support and IT services.

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 Laganière. 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 Laganière. 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 Laganière, 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.

LICENSES & CERTIFICATIONS

LF 2022	Kubernetes Certified Application Developer (CKAD)	Cred ID: LF-dw7drkok9g
Udemy 2022	Kubernetes Certified Application Developer (CKAD)	Cred ID: UC-5b25a18-34bf-446d-800f-26c3e7d97821
Coursera 2019	Deep Learning Specialization	Cred ID: G8YPRSBRUR4X
	Structuring Machine Learning Projects	Cred ID: 5D9RY2485Z4G
	Sequence Models	Cred ID: GCJHGKVL6ZLL
	ConvNN (i.e., LeNet, AlexNet, GoogleNet, VGG, ResNets)	Cred ID: NQNLA6AYQ7NM
	Neural Networks and Deep Learning	Cred ID: XJPXEXXMSB8K
	Hyperparameter tuning, Regularization and Optimization	Cred ID: XFSWVLMMR4KM

PATTENTS

2017 Tempo Analytics	System and method for gathering data related to quality of service in a customer service environment. CA 3014365 — PCT/CA2017/050849 — WO2019/010557.

TEACHING EXPERIENCE

2009 – 2015 University of Ottawa	Programming Paradigms. (CSI2120),	Winter 20{15	11}.
	Operative Systems (CSI 3131),	Summer 2015.
	Advanced Programming Concepts in C++{11} (CSI 2372).	Fall 20{14	12	10}.
	Introduction to Computing I & II (ITI 11{20 | 21} - Python),	Fall 2015.
	Introduction to Computing I & II (ITI 11{20	21} - Java),	Winter 20{14	13}.
	Computing Concepts for Business (CSI1306).	Fall 2009.
2006 – 2008 University of Havana	Network Administration in GNU/Linux,	Fall 200{7	8}
	Object Oriented Programming with Java and C#,	Summer 200{8	7}.
	SQL and Relational Database Model Concepts,	Fall 2005

SKILLS & EXPERTISE

Expertise
Agile Management · Computer Vision · Image Processing · Machine Learning Data Structure & Algorithms · Object-Oriented Programming · RDMS (i.e., MSQL, MySQL, Postgres, and SQLite) · Non-SQL · Networking · Cloud Deployment · Containerization · Web Development/Design · e-Commerce · GIS · MVC

Markup and Programming Languages
C++ · C · Python · Java · C# · PHP · R · Matlab · JavaScript · Prolog · Perl · Bash · HTML 5 · XML · CSS 3

Software Development Tools
OpenCV · Microsoft Azure · Kubernetes · Docker · Visual Studio · Xcode · Jupiter Labs · Docker Images · Git · SVN · make · jQuery · LaTeX · Adobe Photoshop · Adobe Illustrator · Adobe Lightroom · Adobe Dreamweaver · OpenOffice · Microsoft Office Tools

HONORS & AWARDS

2022	Award of Excellence: Innovation. Statistics Canada
2020	Outstanding Contribution Award. Statistics Canada
2019	Best Exterior Photo, First Place, Doors Opens/Portes Ouvertes by City of Ottawa
2019	Grand Prize Winner, Canada in One City Photo Contest by @Ottawatourism
2019	Grand Prize Photography Award, Ottawa in Bloom Contest by @Ottawatourism
2018	Professional Diploma in Photography (Shawacademy EQF Level 5).
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

TECHNICAL REVIEWS - JOURNALS AND CONFERENCES

IEEE Transactions on Instrumentation & Measurement. TIM $20\{16 \mid 17 \mid 18\}$.

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

Citizenship	CANADIAN

Languages	ENGLISH :	Fluent
	SPANISH :	Native
	FRENCH :	Beginner

Security Clearance RELIABILITY : expiring 2027 · SECRET : expiring 2028

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

Interests & Hobbies Photography (IG: @asolism) · Motorcycle Riding · Dancing · Music · Soccer · Volleyball · Skating · Baseball · Cross-country skiing · Discovering new places and restaurants