ANDRÉS SOLÍS MONTERO

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OVERVIEW

Professional Summary

A technical lead, project manager, and lead data scientist with a Ph.D. in Computer Science. Specializing in Computer Vision, Image Processing, Information Extraction, Machine Learning and Deep Learning solutions with a strong mathematical, data management, and analytics background. Researcher, published author with over 1000 citations, and technical reviewer for more than nine years. Strong knowledge and experience managing agile software development processes and teams. My experience brings invaluable insight into analyzing, processing, visualizing, and reporting meaningful decisions. A lead who performs and delegates multiple duties while motivating staff, making sound decisions, and working with stakeholders at all levels of responsibility. Extensive experience architecting and delivering technology products while successfully allocating resources and timelines. I am a versatile leader with a broad knowledge of programming languages, Artificial Intelligence, business intelligence, agile project management, cloud architecture, microservices, analytics, and product delivery. I have taught courses in computer science, operating systems, and advanced programming concepts for over ten years at the University Level. Reliability and Secret security clearances are valid until 2028.

Full-Stack Software Developer

Over 15 years of experience in software development, and product delivery using open-source and proprietary solutions in the private and public sectors. Architect and Cloud Native developer working on his Kubernetes Developer and Administrator certifications. A developer who enjoys simplicity in design, creative code, and innovation, with an eye for designing and developing Graphical User Interfaces. Encourages collaborative work environments, stimulates group creativity and promotes sharing of knowledge. Specialized in Computer Vision, Machine Learning, Information Extraction, Object Oriented Programming, Data Structures and Algorithms, and scripting solutions. Experienced in Python, C++, R, ETL pipelines, RestAPIs, Web technologies, SQL and NoSQL databases, DevOps, Kubernetes, CI/CD, and Containerization.

WORK EXPERIENCE

2020–Present
DScD, StatCan, Canada

Lead Data Scientist
Project Manager and Technical Lead of several projects and products under the Data Science Division / Product Deliver Section. Working on product delivery (i.e., planning, integration, and delivery), ETL data pipelines, Information Extraction, native cloud architectures, microservices, analytics, and ML solutions for clients such as the Public Health Agency of Canada (PHAC), Health Canada (HC), and Statistics Canada (StatCan). Team lead of high-profile projects such as Covid19-PPE, Frontier Counts, Hydra, SEDAR, Census Chatbot, and Cyclops. Recipient of two annual excellence awards for Innovation and Outstanding Contribution as part of the cloud migration initiative of Statistics Canada. Proficient in creating, supervising, and deploying native cloud products with an agile leadership style and building the organization capacity at technical and administrative levels.

2016–2020
Tempo Analytics, Canada

Co-Founder, CTO, AI 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 Computer Vision solutions (i.e., Deep Learning) for detection, re-identification, tracking, and metric learning. Creating and designing web tools to control the application's nodes features, providing business intelligence and analytics. Managed a research team of Masters and Doctorate researchers.

2010–2016
University of Ottawa, Canada

Research Assistant, Computer Vision Software Developer
Computer Vision researcher and a published author. Presenting research findings and developing novel AI algorithms in the field of Computer Vision. My main area of research was shape analysis, object detection and tracking for augmented reality, robot localization, and surveillance applications.

2011–2012
Proximify

Senior Web Developer
Founding member of a networking engine powering a web platform: UniWeb for academic institutions and grant agencies. The UniWeb platform envisioned a research networking tool with strong ties to the Canadian Common CVs. A multilingual, cloud, and on-premise platform for academic information management streamlining research funding applications. Core architect and senior JavaScript developer of the platform. Worked on usability, human Interaction, accessibility, and security assessment of the developed components.

2010–2011
Dalen Design

Web Developer
Development and maintenance of the e-commerce website: Hot Tub Covers Canada. Development and maintenance of the e-commerce website: Hot Tub Covers Canada. Processing electronic payments, managing SSL/TLS certificates, authentication, shopping cart solutions, and showcasing products, and accessories for hot tub clients.

2009–2010
Hegyi Geomatics international Inc

Software Developer
Design and development of GIS tools for the forest industry. Integrated Machine Learning solutions for 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** A published author, researcher, 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 a multi-platform information extraction tool for unsupervised document clustering based on content and metadata. In charge of creating Extraction, Transforming and Loading data pipelines (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. Provided network support and IT services to the University Infrastructure. Design, development, and validation of network administration tools using open source tools for user monitoring, domain login, email access, and internet quota management.

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

The Linux Foundation 2022

Kubernetes Developer - CKAD   In Progress
Kubernetes Administrator - KAD   In Progress

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

Technical Lead · Agile Management · Product Delivery · Scrum Manager · Native Cloud Solutions · Computer Vision · Image Processing · Machine Learning Data Structure & Algorithms · Object-Oriented Programming · RDMS (i.e., MSQL, MySQL, Postgres, and SQLite) · Non-SQL · Networking · Containerization · Web Developer UX/UI · e-Commerce · GIS · MVC development

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 · CI/CD · Containerization · Visual Studio · Xcode · Jupiter Labs · Git · SVN · make · jQuery · LaTeX · Adobe Photoshop · Adobe Illustrator · Adobe Lightroom · Adobe Dreamweaver · OpenOffice · Microsoft Office Tools

HONORS & AWARDS

2022	Awards of Excellence. Innovation. Statistics Canada
2020	Outstanding Contribution Award. Creativity and Innovation. 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 | 17 | 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

Languages	ENGLISH	:	Fluent
	SPANISH	:	Native

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