

OVERVIEW

- Research scientist** A senior data scientist with a Ph.D. in Computer Science, specializing in Computer Vision, Image Processing, Machine Learning and Deep Learning solutions with a strong mathematical, data management, and analytics background. Published author with over 1000 citations, and technical reviewer for more than nine years. My experience brings invaluable insight into analyzing, processing, and reporting meaningful reports, decisions, and visualizing data. I am a versatile researcher with a broad knowledge of programming languages, databases, and data structures.
- Full-Stack Software Developer** Over 15 years of experience in software and web development. A developer who enjoys simplicity in design, creative code, 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, Deep Learning - Convolutional Neural Networks (i.e., LeNet, AlexNet, VGG, GoogleNet, and ResNets), Object Oriented Programming, Data Structures and Algorithms, and scripting solutions. Experienced in C++, R, Python, Java, Web technologies, and SQL databases.
- Teaching experience** I have taught courses in computer science, programming languages, and advanced programming concepts for over ten years at the University Level.

WORK EXPERIENCE

- 2020–Present* **Senior Data Scientist**
DScD, StatCan, Canada Lead and project manager of several projects under the Data Science Division / Product Delivery Section for clients such as Public Health Agency of Canada (PHAC), and Health Canada (HC). Working on product delivery, production planning, data integration, ML modelling, deep learning, and cloud integration (i.e., DAaaS platform and CAE Microsoft Azure) for the following projects: Cyclops, COVID-19 Pandemic Hubs, PPE - EPI Model, and Frontier Counts.
- 2016–Present* **Co-Founder, Research & Development, Software Development Engineer**
Tempo Analytics, Canada 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 applications nodes features, and display analytics.
- 2010–2016* **Research Assistant, Computer Vision Software Developer**
University of Ottawa, Canada 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 **Senior Web Developer**
Proximify 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 **Web Developer**
Dalen Design 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 **Software Developer**
Hegyi Geomatics international Inc 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 **Research Assistant, Computer Vision Software Developer**
University of Ottawa, Canada 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 **Software Developer**
Navaera USA LLC 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 **Network Administrator, Software Developer**
University of Havana, Cuba 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 **Doctor of Philosophy in Computer Science** GPA: 10.0/10.0
University of Ottawa, Canada 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 **Master of Computer Science** GPA: 10.0/10.0
University of Ottawa, Canada 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 **Bachelor of Computer Science** GPA: 4.56/5.0 (magna cum laude)
University of Havana, Cuba 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.

LICENSES & CERTIFICATIONS

<i>Coursera</i>	Deep Learning Specialization	Cred ID: G8YPRSBUR4X
2019	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

PATENTS

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

TEACHING EXPERIENCE

2009 – 2015	Programming Paradigms. (CSI2120),	Winter 20{15 11}.
<i>University of Ottawa</i>	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	Network Administration in GNU/Linux,	Fall 200{7 8}
<i>University of Havana</i>	Object Oriented Programming with Java and C#,	Summer 200{8 7}.
	SQL and Relational Database Model Concepts,	Fall 2005

SKILLS & EXPERTISE

<i>Expertise</i>	Computer Vision · Image Processing · Machine Learning Data Structure & Algorithms · Object-Oriented Programming · RDMS (i.e., MSQl, MySQL, Postgres, and SQLite) · Networking · Web Development/Design · e-Commerce · GIS · MVC
<i>Markup and Programming Languages</i>	C++ · C · Python · Java · C# · PHP · R · Matlab · JavaScript · Prolog · Perl · Bash · HTML 5 · XML · CSS 3
<i>Software Development Tools</i>	OpenCV · Microsoft Azure · Visual Studio · Xcode · Jupiter Labs · Docker Images · Git · SVN · make · jQuery · L ^A T _E X · Adobe Photoshop · Adobe Illustrator · Adobe Lightroom · Adobe Dreamweaver · OpenOffice · Microsoft Office Tools

HONORS & AWARDS

- 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 **RELIABILITY** : expiring 2027 · **SECRET** : expiring 2028
Clearance

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