Leo Thomas Ramos

CONTACT & NETWORKS

- 📍 Barcelona, Spain
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- 🆔 0000-0001-7107-7943
- Ⓖ Leo Ramos - Google Scholar
- ■ Scopus Author ID: 57976270500
- ■ ResearcherID: KLC-3681-2024

HARD SKILLS

Programming Languages
- Python
- R

Artificial Intelligence
- Keras
- TensorFlow
- PyTorch
- Hugging Face
- Scikit-Learn
- Pandas
- OpenCV
- Seaborn
- Matplotlib
- Numpy
- High-performance computing

Operating Systems
- Windows
- Linux

Others
- LaTeX/Overleaf
- GitHub
- Visual Studio Code
- Google Colaboratory

SOFT SKILLS

- Multitasking
- Work under pressure
- Team work
- Adaptability
- Organization
- Problem solving
- Stress management
- Interpersonal communication
- Team leadership
- Learning potential

LANGUAGES

- **Spanish** ●●●●●
- **English** ●●●●○
- **Italian** ●○○○○

EXPERIENCE

Research Engineer
📅 09/2023 - Now
📍 Kauel Inc., Silicon Valley, California, USA

Responsible for researching and developing computer vision algorithms for industrial and energy sector challenges. Managing projects and leading teams to meet objectives. Contributing to the field through peer-reviewed scientific publications.

Senior Research Engineer
📅 08/2023 - Now
📍 Zeus Intelligent Solutions, Houston, Texas, USA

Responsible for developing advanced deep learning models for computer vision applications, specifically tailored for industrial use. Responsibilities include conceptualizing, designing, and optimizing neural network architectures. Furthermore, leading research projects with interdisciplinary teams.

Researcher
📅 05/2023 - 11/2024
📍 SleepCare Clinics, Leicester, United Kingdom

Responsible for applying artificial intelligence methods to medical research. Duties include developing and optimizing algorithms for medical data analysis, collaborating with healthcare professionals and engineers, and supporting the clinic's research and development efforts.

Trainee Engineer
📅 03/2023 - 08/2023
📍 Kauel Inc., Silicon Valley, California, USA

Responsible for the research and development of computer vision systems for early wildfire detection. Tasks included designing and optimizing algorithms, collecting datasets, training models, and integrating developed models into existing systems.

Research Assistant
📅 01/2023 - 03/2023
📍 Yachay Tech University, Urcuquí, Ecuador

Four times research assistant for the projects:
- The Role of Artificial Intelligence in Fashion Companies to Achieve Sustainability.
- Deep Reinforcement Learning with Microcircuits in Clever Game Playing.
- Artificial Intelligence for the Diagnosis, Treatment, and Prevention of Sleep Apnea.
- Online vs. Offline Computing: Comparison, Applications and Use-cases.

Principal research assistant responsible for conducting comprehensive literature reviews, synthesizing findings, benchmarking performance, developing computational models, and authoring research papers.

Computer Vision Intern
📅 02/2022 - 09/2022
📍 TALOV Inc., Newark, Delaware, USA

Responsible for developing neural network models to aid people with disabilities in daily activities. Conducted research on cutting-edge techniques in computer vision and natural language processing. Developed models for translating sign languages into spoken languages.

Teaching Assistant
📅 11/2021 - 02/2022
📍 Yachay Tech University, Urcuquí, Ecuador

Responsible for planning the Web Development course, including designing practice projects and study materials. Provided tutoring and support to students, and participated in the grading process.

EDUCATION

PhD in Computer Science
📅 12/2023 - Now
📍 Computer Vision Center, Universitat Autònoma de Barcelona, Barcelona, Spain

Research line: Computational models for artificial vision. Supervisor: Ángel D. Sappa, PhD

Information Technology Engineering
📅 07/2018 - 07/2023
📍 Yachay Tech University, Urcuquí, Ecuador

Engineering degree focused on artificial intelligence, machine learning, deep learning, computer vision, natural language processing, and data science. **GPA: 3.76/4 (9.4/10)**

RESEARCH GROUPS

PhD Researcher
📅 11/2023 - Now
📍 MultiSpectral Image Analysis and Understanding (MSIAU) Research Group, Computer Vision Center, Universitat Autònoma de Barcelona, Barcelona, Spain.

Research areas: Computer Vision, Machine Learning, Deep Learning, Multispectral Imaging, Remote Sensing.

Undergraduate Researcher
📅 11/2022 - 11/2023
📍 Numerical Analysis and Data Science Research Group, Yachay Tech University, Urcuquí, Ecuador.

Research areas: Data Science, Machine Learning, Statistical Analysis, Multivariate Analysis.

Undergraduate Researcher
📅 02/2022 - 06/2023
📍 Deep Learning for Autonomous Driving, Robotics, and Computer Vision (DeepARC) Research Group, Yachay Tech University, Urcuquí, Ecuador.

Research areas: Deep Learning, Computer Vision.

ACHIEVEMENTS, HONOURS & AWARDS

🏆 **Recognition for Research Excellence** at Yachay Tech University (2024)

Awarded during the 11th-anniversary ceremony of Yachay Tech University for being the alumnus with the highest number of high-impact scientific publications.

🏆 **Postgraduate Scholarship** at Kauel Inc. (2023)

Awarded a postgraduate scholarship by Kauel Inc. based on prior experience as a Trainee Engineer, in recognition of exceptional contributions and potential within the company.

🏆 **Magna Cum Laude** at Yachay Tech University (2023)

Recognized with the academic honor of Magna Cum Laude for exceptional performance throughout the Engineering program in Information Technology

🏆 **Undergraduate Academic Excellence Scholarship** at Yachay Tech University

Recipient of the prestigious Academic Excellence Scholarship for seven consecutive times, from 2019 to 2023

CLUBS & MEMBERSHIPS

-**IEEE Computer Society**
-**IEEE Computational Intelligence Society**
-**IEEE Geoscience and Remote Sensing Society**
-**IEEE Engineering in Medicine and Biology Society**
-**IEEE Industry Applications Society**
-**IEEE Young Professionals**
-**IEEE Consultants Network**
-**LatinX in AI**

HOBBIES & INTERESTS

Workout

Running

Reading

Music appreciation

Language learning

Photography

📅 04/2022 - 11/2022
📍 Scientific Computing Group,
Yachay Tech University, Urcuquí, Ecuador.
Research areas: Machine Learning, Deep Learning, Image Processing.

Undergraduate Researcher

GRANTS AND FOUNDED PROJECTS

Grant #: FA9550-24-1-0206
Funding organization: Air Force Office of Scientific Research, USA
Project: Advancing Camouflaged Object Detection with a Cost-Effective Cross-Spectral Vision System (ACOD-CS)
Grant period: 07/2024-07/2028
Role: PhD Student

PEER REVIEW ACTIVITIES

Journal/Conference: IEEE Open Journal of the Computer Society (*IEEE*)
Metrics: Q1 (SJR); Q1 (JCR); IF=5.7; SC=12.6; H-index=17
Year: Since 2024

Journal/Conference: Computerized Medical Imaging and Graphics (*Elsevier*)
Metrics: Q1 (SJR); Q1 (JCR); IF=5.4; SC=10.7; H-index=93
Year: Since 2024

Journal/Conference: Conference on Neural Information Processing Systems (*NeurIPS Foundation*)
Conference location: Vancouver, Canada
Year: 2024

Journal/Conference: Computer Science Review (*Elsevier*)
Metrics: Q1 (SJR); Q1 (JCR); IF=13.3; SC=32.7; H-index=75
Year: Since 2024

Journal/Conference: Medical Image Analysis (*Elsevier*)
Metrics: Q1 (SJR); Q1 (JCR); IF=10.7; SC=22.1; H-index=171
Year: Since 2024

Journal/Conference: IEEE Transactions on Systems, Man, and Cybernetics: Systems (*IEEE*)
Metrics: Q1 (SJR); Q1 (JCR); IF=8.6; SC=18.5; H-index=171
Year: Since 2024

Journal/Conference: Pattern Recognition Letters (*Elsevier*)
Metrics: Q1 (SJR); Q2 (JCR); IF=5.1; SC=12.4; H-index=181
Year: Since 2024

Journal/Conference: Pattern Recognition (*Elsevier*)
Metrics: Q1 (SJR); Q1 (JCR); IF=8; SC=14.4; H-index=245
Year: Since 2024

Journal/Conference: Neurocomputing (*Elsevier*)
Metrics: Q1 (SJR); Q2 (JCR); IF=6; SC=10.8; H-index=196
Year: Since 2024

Journal/Conference: Engineering Applications of Artificial Intelligence (*Elsevier*)
Metrics: Q1 (SJR); Q1 (JCR); IF=8; SC=12.3; H-index=137
Year: Since 2024

Journal/Conference: IEEE Access (*IEEE*)
Metrics: Q1 (SJR); Q2 (JCR); IF=3.9; SC=9; H-index=242
Year: Since 2024

Journal/Conference: Computers and Electronics in Agriculture (*Elsevier*)
Metrics: Q1 (SJR); Q1 (JCR); IF=8.3; SC=13.6; H-index=168
Year: Since 2024

Journal/Conference: Image and Vision Computing (*Elsevier*)
Metrics: Q1 (SJR); Q1 (JCR); IF=4.7; SC=7.3; H-index=144
Year: Since 2024

Journal/Conference: Expert Systems with Applications (*Elsevier*)
Metrics: Q1 (SJR); Q1 (JCR); IF=8.5; SC=12.6; H-index=271
Year: Since 2024

COURSES & CERTIFICATIONS

2024

[Multiple courses] - Simplilearn in collaboration with IBM

Data Scientist Master's Program

2024

[Multiple courses] - Simplilearn in collaboration with IBM

Artificial Intelligence Engineer Master's Program

2023

[8h] - NVIDIA Deep Learning Institute

Fundamentals of Deep Learning

2023

[17h] - Platzi

Deep Learning con PyTorch

2022

[13h] - Platzi

Transfer Learning con Hugging Face

2022

[16h] - Platzi

Redes Neuronales Profesionales con Tensorflow

2022

[20h] - Platzi

Redes Neuronales Convolucionales con Python y Keras

2022

[16h] - Platzi

Fundamentos de Redes Neuronales con Python y Keras

2022

[33h] - IBM through Coursera

Specialization in AI Foundations for Everyone

2022

[60h] - Tecnológico de Monterrey through edX

Professional Certificate in Data Science

2022

[22h] - IBM through Coursera

Python for Data Science, AI & Development

2022

[22h] - IBM through Coursera

Machine Learning with Python

2022

[29h] - DeepLearning.AI through Coursera

Neural Networks and Deep Learning

2022

[59h] - Data Mining Consulting Peru

Specialization in Machine Learning and Deep Learning with Python

2022

[14h] - Data Mining Consulting Peru

Python for Analytics

2022

[22h] - Data Mining Consulting Peru

Statistics for Data Science

2022

[49h] - Universidad Autónoma de Madrid through edX

Professional Certificate in Development and Management of IT Projects

PUBLICATIONS

Journals

A Study of YOLO Architectures for Wildfire and Smoke Detection in Ground and Aerial Imagery
👥 **L. Ramos**, E. Casas, C. Romero, F. Rivas-Echeverría, E. Bendek

📅 2025   📖 Submitted   🔗 Available soon

Deep Sky Object Detection in Astronomical Imagery Using YOLO Models: A Comparative Assessment
👥 **L. Ramos**, F. Rivas-Echeverría

📅 2025   📖 Submitted   🔗 Available soon

Tomato Leaf Disease Detection Using YOLO: A Comparative Study
👥 **L. Ramos**, A. D. Sappa

📅 2025   📖 Submitted   🔗 Available soon

Multi-objective Benchmark for Optimal Urban Electric Vehicle Charging Station Placement
👥 **L. Ramos**, R. Armas

📅 2025   📖 Submitted   🔗 Available soon

Stance-EC: A Spanish-language Data Set on Polarized Twitter Conversations About the 2022 Protests in Ecuador
👥 **L. Ramos**, M. Bermeo, S. Escobar, D. Morales-Navarrete, E. Cuenca

📅 2025   📖 Submitted   🔗 Avaiable soon

A Web/Mobile Application for Intelligent Identification of Endemic Galápagos Bird Species
👥 R. Farinango, **L. Ramos**, J. P. Astudillo León

📅 2025   📖 Submitted   🔗 Available soon

A Brief Landscape of Artificial Intelligence Applications in Security Operations
👥 J. J. Román, K. N. Alrazooqi, **L. Ramos**, E. Casas, C. Romero, F. Rivas-Echeverría, and E. Bendek

📅 2025   📖 Submitted   🔗 Available soon

Leveraging U-Net and Selective Feature Extraction for Land Cover Classification Using Remote Sensing Imagery
👥 **L. Ramos**, A. D. Sappa

📅 2025   📖 Scientific Reports, vol. 15, pp. 784, doi: https://doi.org/10.1038/s41598-024-84795-1   🔗 Access

Synthetic Generated Data for Intelligent Corrosion Classification in Oil and Gas Pipelines
👥 **L. Ramos**, E. Casas, F. Rivas-Echeverría

📅 2025   📖 Intelligent Systems with Applications, vol. 25, pp. 200463, doi: 10.1016/j.iswa.2024.200463   🔗 Access

A Review of Computer Vision Applications for Asset Inspection in the Oil and Gas Industry
👥 E. Casas, **L. Ramos**, C. Romero, F. Rivas-Echeverría

📅 2025   📖 Journal of Pipeline Science and Engineering, vol. xx, pp. 1-24, doi: 10.1016/j.jpse.2024.100246   🔗 Access

Multispectral Semantic Segmentation for Land Cover Classification: An Overview
👥 **L. Ramos**, A. D. Sappa

📅 2024   📖 IEEE Journal of Selected Topics in Applied Earth Observations and Remote Sensing, vol. 17, pp. 14295-14336, doi: 10.1109/JSTARS.2024.3438620   🔗 Access

A Semiautomatic Image Processing-based Method for Binary Segmentation of Lungs in Computed Tomography Images
👥 **L. Ramos**, I. Pineda

📅 2024   📖 SN Computer Science, vol. 5, pp. 1-14, doi: 10.1007/s42979-024-03047-1   🔗 Access

Hyperparameter Optimization of YOLOv8 for Smoke and Wildfire Detection: Implications for Agricultural and Environmental Safety
👥 **L. Ramos**, E. Casas, E. Bendek, C. Romero, F. Rivas-Echeverría

📅 2024   📖 Artificial Intelligence in Agriculture, vol. 12, pp. 109-126, doi: 10.1016/j.aiia.2024.05.003   🔗 Access

An End-to-End Platform for Managing Third-party Risks in Oil Pipelines
👥 E. Casas, **L. Ramos**, C. Romero, F. Rivas-Echeverría, D. Cerpa, P. Hernández, G. Orellana, J. L. Ibarra, C. Rosas Albrecht, N. Cuevas, J. C. Gallardo Hurtado

A Comparative Study of YOLOv5 and YOLOv8 for Corrosion Segmentation Tasks in Metal Surfaces

E. Casas, **L. Ramos**, E. Bendek, C. Romero F. Rivas-Echeverría

Computer Vision for Wildfire Detection: A Critical Brief Review

L. Ramos, E. Casas, E. Bendek, C. Romero, F. Rivas-Echeverría

A Study of ConvNeXt Architectures for Enhanced Image Captioning

L. Ramos, E. Casas, C. Romero, F. Rivas-Echeverría, M. E. Morocho-Cayamcela

YOLOv5 vs. YOLOv8: Performance Benchmarking in Wildfire and Smoke Detection Scenarios

E. Casas, **L. Ramos**, E. Bendek, F. Rivas-Echeverría

Automating Case Assessment in Ecuador's Legal System: A Web-Based Application for COIP Consultation

F. Rivas-Echeverría, **L. Ramos**, B. Gil-Osuna, S. Arciniegas, E. A. Enríquez

Continual Learning, Deep Reinforcement Learning and Microcircuits: A Novel Method for Clever Game Playing

O. Chang, **L. Ramos**, R. Armas, M. E. Morocho-Cayamcela, L. Zhinin

SustainMeter: A Knowledge-based System for Assessing Sustainability of SMEs in the Fashion Industry

L. Ramos, M. Bermeo, A. Quelal, A. Crespo, G. Cajamarca, F. Rivas-Echeverría

Assessing the Effectiveness of YOLO Architectures for Smoke and Wildfire Detection

E. Casas, **L. Ramos**, E. Bendek, F. Rivas-Echeverría

EngineFaultDB: A Novel Dataset for Automotive Engine Fault Classification and Baseline Results

M. Vergara, **L. Ramos**, D. Rivera, F. Rivas-Echeverría

Artificial Intelligence and Sustainability in the Fashion Industry: A Review From 2010 to 2022

L. Ramos, F. Rivas-Echeverría, A. Pérez, E. Casas

Sentiment Analysis of Russia-Ukraine Conflict Tweets Using RoBERTa

L. Ramos, O. Chang

AI's Next Frontier: The Rise of ChatGPT and Its Implications on Society, Industry, and Scientific Research

L. Ramos, R, Márquez, F. Rivas-Echeverría

Conference Proceedings

Dual-branch ConvNeXt-based Network with Attentional Fusion Decoding for Land Cover Classification Using Multispectral Images

L. Ramos, A. Sappa

Efficient Location of Electric Vehicle Charging Stations Using Traffic Flow Simulations and Artificial Intelligence

L. Ramos, T. Armas

📅 2025   📄 Accepted: 12th IEEE Conference on Technologies for Sustainability (SusTech), Los Angeles, California, USA, pp. xx, doi: 🔗 Avaliable soon

Enhanced Aerial Scene Classification Through ConvNeXt Architectures and Channel Attention

👥 **L. Ramos**, A. Sappa

📅 2025   📄 Accepted: 10th International Congress on Information and Communication Technology (ICICT), London, United Kingdom, pp. xx-xx, doi: 🔗 Avaliable soon

Development of a Wildfire Detection and Monitoring Solution Using Computer Vision

👥 **L. Ramos**, E. Casas, C. Romero, F. Rivas-Echeverría, D. Cerpa, P. Hernández, G. Orellana, J. L. Ibarra, C. Rosas Albrecht, N. Cuevas, J. C. Gallardo Hurtado

📅 2024   📄 8th IEEE Internatioal Forum on Research and Technologies for Society and Industry (RTSI), Milano, Italy, pp. 613-618, doi: 10.1109/RTSI61910.2024.10761772   🔗 Access

Design of a Computer Vision-based Third-party Risk Alert System for Oil & Gas Pipeline Corridors

👥 E. Casas, **L. Ramos**, C. Romero, F. Rivas-Echeverría, D. Cerpa, P. Hernández, G. Orellana, J. L. Ibarra, C. Rosas Albrecht, N. Cuevas, J. C. Gallardo Hurtado

📅 2024   📄 IEEE Technology and Engineering Management Society (TEMSCON LATAM), Panama City, Panama, pp. 1-6, doi: 10.1109/TEMSCONLATAM61834.2024.10717643   🔗 Access

Success Cases and Lessons Learned After 20 Years of Oilfield Digitalization Efforts

👥 L. Saputelli, J. Duran, F. Rivas, E. Casas, **L. Ramos**, C. Bravo, A. Chacon, C. Temizel, S. Mubarak, J. Chacon, A. Escorcia, M. Elred, S. Diaz, A. Yrigoyen, G. Moricca, M. Querales, C. Lopez

📅 2024   📄 SPE Annual Technical Conference and Exhibition (ATCE), New Orleans, Louisiana, USA, pp. 1-47, doi: 10.2118/220932-MS   🔗 Access

Sonar Signal Classification through Dimensionality Reduction and Artificial Intelligence

👥 **L. Ramos**, M. Bermeo, I. Amaro

📅 2024   📄 8th International Artificial Intelligence and Data Processing (IDAP) Symposium, Malatya, Turkiye, pp. 1-8, doi: 10.1109/IDAP64064.2024.10711076   🔗 Access

A Digital System Proposal for Streamlined Consultations of Ecuador's Comprehensive Penal Code

👥 F. Rivas-Echeverría, Sonia Cerpa-Bonillo, **L. Ramos**, Stalin Arciniegas

📅 2023   📄 8th International Conference on Mathematics and Computers in Sciences and Industry (MCSI), Athens, Greece, pp. 68-74 doi: 10.1109/MCSI60294.2023.00019   🔗 Access

The Role of Artificial Intelligence in Enhancing Sustainability in the Fashion Industry: A 2012-2022 Review

👥 **L. Ramos**, F. Rivas-Echeverría, E. Casas, A. G. Pérez

📅 2023   📄 8th International Conference on Mathematics and Computers in Sciences and Industry (MCSI), Athens, Greece, pp. 89-95 doi: 10.1109/MCSI60294.2023.00022   🔗 Access

An Exploratory Data Analysis of the Ecuadorian Security Crisis: Insights from 2021 and 2022

👥 **L. Ramos**, K. Román, I. Amaro

📅 2023   📄 International Conference on Computer Science, Electronics and Industrial Engineering (CSEI), Ambato, Ecuador, pp. 686-703 doi: 10.1007/978-3-031-69228-4_45   🔗 Access

A Comparative Exploration of PCA Variants for Clustering Analysis

👥 **L. Ramos**, F. Rivas-Echeverría, I. Amaro, F. Camacho

📅 2023   📄 4th International Conference of Information Systems and Software Technologies (ICI2ST), Quito, Ecuador, pp. 60-67, doi: 10.1109/ICI2ST62251.2023.00016   🔗 Access

Uncovering the Effects of the Russia-Ukraine Conflict on Cryptocurrencies: A Data-Driven Analysis with Clustering and Biplot Techniques

👥 **L. Ramos**, M. Bermeo, I. Amaro

📅 2023   📄 11th International Conference on Information and Communication Technologies (TICEC), Cuenca, Ecuador, pp. 3-21 doi: 10.1007/978-3-031-45438-7_1   🔗 Access

Lung Segmentation Pipeline for CT Images

👥 **L. Ramos**, I. Pineda

📅 2022   📄 IEEE Sixth Ecuador Technical Chapters Meeting (ETCM), Quito, Ecuador, pp. 1-6 doi: 10.1109/ETCM56276.2022.9935736   🔗 Access

U-Net vs. TransUNet: Performance Comparison in Medical Image Segmentation

👥 R. Castro, **L. Ramos**, S. Román, M. Bermeo, A. Crespo, E. Cuenca

📅 2022   📄 4th International Conference on Applied Technologies (ICAT), Quito, Ecuador, pp. 212-226 doi: 10.1007/978-3-031-24985-3_16   🔗 Access