Leo Thomas Ramos

CONTACT & NETWORKS

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- ▪️ 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
- Time management
- Adaptability
- Organization
- Problem solving
- Stress management
- Interpersonal communication
- Cross-functional team leadership
- Learning potential

LANGUAGES

- Spanish ●●●●●
- English ●●●●○

⚙️ EXPERIENCE

Applied 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 to achieve high performance and reliability. Furthermore, leading research projects with interdisciplinary teams, driving innovation and implementing practical solutions.

Researcher
📅 05/2023 - Now
📍 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
📅 2023 - Now
📍 Computer Vision Center, Universitat Autònoma de Barcelona, Barcelona, Spain
Research line: Computational models for artificial vision. Supervisor: Ángel Sappa, PhD

Information Technology Engineering
📅 2018 - 2023
📍 Yachay Tech University, Urcuquí, Ecuador
Focus on artificial intelligence, machine learning, deep learning, computer vision, natural language processing, and data science

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.

ACHIEVEMENTS, HONOURS & AWARDS

🏆 **Postgraduate Scholarship** at Kauel Inc.

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

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 Member
IEEE Young Professionals
IEEE Consultants Network Membership

HOBBIES & INTERESTS

Workout

Running

Reading

Music appreciation

Language learning

Photography

PEER REVIEW ACTIVITIES

Since 2024 — Pattern Recognition Letters
Publisher: Elsevier
Metrics (2023): Q1 (SJR); Q2 (JCR); IF=5.1; SC=12.4; H-index=181
Subject areas: Artificial Intelligence, Computer Vision and Pattern Recognition, Signal Processing, Software

Since 2024 — Pattern Recognition
Publisher: Elsevier
Metrics (2023): Q1 (SJR); Q1 (JCR); IF=8; SC=14.4; H-index=245
Subject areas: Artificial Intelligence, Computer Vision and Pattern Recognition, Signal Processing, Software

Since 2024 — Neurocomputing
Publisher: Elsevier
Metrics (2023): Q1 (SJR); Q2 (JCR); IF=6; SC=10.8; H-index=196
Subject areas: Artificial Intelligence, Computer Science Applications, Cognitive Neuroscience

Since 2024 — Engineering Applications of Artificial Intelligence
Publisher: Elsevier
Metrics (2023): Q1 (SJR); Q1 (JCR); IF=8; SC=12.3; H-index=137
Subject areas: Artificial Intelligence, Control and Systems Engineering, Electrical and Electronic Engineering

Since 2024 — IEEE Access
Publisher: IEEE
Metrics (2023): Q1 (SJR); Q2 (JCR); IF=3.9; SC=9; H-index=242
Subject areas: Computer Science Miscellaneous, Engineering Miscellaneous

Since 2024 — Computers and Electronics in Agriculture
Publisher: Elsevier
Metrics (2023): Q1 (SJR); Q1 (JCR); IF=8.3; SC=13.6; H-index=168
Subject areas: Computer Science Applications, Agronomy and Crop Science, Animal Science and Zoology, Forestry, Horticulture

Since 2024 — Image and Vision Computing
Publisher: Elsevier
Metrics (2023): Q1 (SJR); Q1 (JCR); IF=4.7; SC=7.3; H-index=144
Subject areas: Computer Vision and Pattern Recognition, Signal Processing, Electrical and Electronic Engineering

Since 2024 — Expert Systems with Applications
Publisher: Elsevier
Metrics (2023): Q1 (SJR); Q1 (JCR); IF=8.5; SC=12.6; H-index=271
Subject areas: Artificial intelligence, Computer science applications, Engineering (miscellaneous)

Since 2024 — Information Processing & Management
Publisher: Elsevier
Metrics (2023): Q1 (SJR); Q1 (JCR); IF=8.6; SC=14.8; H-index=123
Subject areas: Computer science applications, Information systems, Media technology

2024 — 4th International Conference on Electrical, Computer and Energy Technologies (ICECET)
Publisher: IEEE
Location: Sydney, Australia
Subject areas: Artificial Intelligence, Machine Learning, Deep Learning, Computer Vision

COURSES & CERTIFICATIONS

2024
Simplilearn

Deep Learning with Keras and Tensorflow

2024
Simplilearn

Artificial Intelligence Machine Learning and Deep Learning

2024
Simplilearn

Python for Data Science

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 Perú

Specialization in Machine Learning and Deep Learning with Python

2022
[14h] - Data Mining Consulting Perú

Python for Analytics

2022
[22h] - Data Mining Consulting Perú

Statistics for Data Science

2022
[49h] - Universidad Autónoma de Madrid through edX

Professional Certificate in Development and Management of IT Projects

PUBLICATIONS

Journals

Comparative Analysis of Computer Vision Architectures for Deep Sky Object Detection
L. Ramos
2024   Submitted   Available soon

Multispectral Semantic Segmentation for Land Cover Classification: An Overview
L. Ramos, A. D. Sappa
2024   Submitted   Available soon

Tomato Leaf Disease Detection Using YOLO: A Comparative Study
L. Ramos, A. D. Sappa
2024   Submitted   Available soon

Synthetic Generated Data for Intelligent Corrosion Classification in Oil and Gas Pipelines
L. Ramos, E. Casas, F. Rivas-Echeverría
2024   Submitted   Available soon

Multi-Objective Benchmark for Optimal Urban Electric Vehicle Charging Station Placement
L. Ramos, J. P. Astudillo León, R. Armas
2024   Submitted   Available soon

A Computational Framework for Knowledge Curation Using Natural Language Processing Techniques
L. Ramos, J. Ochoa-Zambrano, J. Garbajosa, E. Morocho
2023   Submitted   Avaliable 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
2024   Submitted   Avaliable soon

Advanced Galápagos Bird Identification: Dataset, Benchmarking, and Application Development
R. Farinango, **L. Ramos**, J. P. Astudillo León
2024   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
2024   Submitted   Available soon

A Semiautomatic Image Processing-based Method for Binary Segmentation of Lungs in Computed Tomography Images
L. Ramos, I. Pineda
2024   Accepted: SN Computer Science   Avaliable soon

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
2024   IEEE Access, vol. 12, pp. 77831-77851, doi: 10.1109/ACCESS.2024.3406604   Access

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
2024   Array, vol. 22, doi: 10.1016/j.array.2024.100351   Access

Computer Vision for Wildfire Detection: A Critical Brief Review
L. Ramos, E. Casas, E. Bendek, C. Romero, F. Rivas-Echeverría

| 2024 | Multimedia Tools and Applications
doi: 10.1007/s11042-024-18685-z | Access |

A Study of ConvNeXt Architectures for Enhanced Image Captioning
L. Ramos, E. Casas, C. Romero, F. Rivas-Echeverría, M. E. Morocho-Cayamcela

| 2024 | IEEE Access, vol. 12, pp. 13711-13728
doi: 10.1109/ACCESS.2024.3356551 | Access |

YOLOv5 vs. YOLOv8: Performance Benchmarking in Wildfire and Smoke Detection Scenarios
E. Casas, **L. Ramos**, E. Bendek, F. Rivas-Echeverría

| 2024 | Journal of Image and Graphics, vol. 12, pp. 127-136
doi: 10.18178/joig.12.2.127-136 | Access |

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

| 2024 | International Journal of Information Technology, vol. 16, pp.2901-2913
doi: 10.1007/s41870-024-01891-1 | Access |

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

| 2024 | Multimedia Tools and Applications
doi: 10.1007/s11042-024-18925-2 | Access |

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

| 2024 | SoftwareX, vol. 25, p. 101611
doi: 10.1016/j.softx.2023.101611 | Access |

Assessing the Effectiveness of YOLO Architectures for Smoke and Wildfire Detection
E. Casas, **L. Ramos**, E. Bendek, F. Rivas-Echeverría

| 2023 | IEEE Access, vol. 11, pp. 96554-96583
doi: 10.1109/ACCESS.2023.3312217 | Access |

EngineFaultDB: A Novel Dataset for Automotive Engine Fault Classification and Baseline Results
M. Vergara, **L. Ramos**, D. Rivera, F. Rivas-Echeverría

| 2023 | IEEE Access, vol. 11, pp. 126155-126171
doi: 10.1109/ACCESS.2023.3331316 | Access |

Artificial Intelligence and Sustainability in the Fashion Industry: A Review From 2010 to 2022
L. Ramos, F. Rivas-Echeverría, A. Pérez, E. Casas

| 2023 | SN Applied Sciences, vol. 5, no. 12
doi: 10.1007/s42452-023-05587-2 | Access |

Sentiment Analysis of Russia-Ukraine Conflict Tweets Using RoBERTa
L. Ramos, O. Chang

| 2023 | Uniciencia, vol. 37, pp. 1-11
doi: 10.15359/ru.37-1.23 | Access |

AI's Next Frontier: The Rise of ChatGPT and Its Implications on Society, Industry, and Scientific Research
L. Ramos, R, Márquez, F. Rivas-Echeverría

| 2023 | Revista Ciencia e Ingeniería, vol. 44, pp. 131-148 | Access |

Conference Proceedings

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 | Submitted | Avaliable soon |

Sonar Signal Classification through Dimensionality Reduction and Artificial Intelligence
L. Ramos, M. Bermeo, I. Amaro

| 2024 | Submitted | Avaliable soon |

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 | Accepted: 2024 IEEE Technology & Engineering Management Conference | Avaliable soon |

A Comparative Exploration of PCA Variants for Clustering Analysis
L. Ramos, F. Rivas-Echeverría, I. Amaro, F. Camacho

📅 2023　　📄 Accepted. 4th International Conference of Information Systems and Software Technologies (ICI2ST)　　🔗 Avaliable soon

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

👥 **L. Ramos**, K. Román, I. Amaro

📅 2023　　📄 Accepted: V International Conference on Computer Science, Electronics and Industrial Engineering (CSEI)　　🔗 Avaliable soon

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

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