

Adrián Segura Ortiz

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Summary

Researcher in artificial intelligence and bioinformatics focused on context-guided computational methods for biomedical data analysis. I am a computer scientist and researcher in artificial intelligence applied to bioinformatics, working at the intersection of computational methods, biomedical data analysis, evolutionary computation, and reproducible scientific software.

My academic background comprises Bachelor's Degree in Health Engineering with a specialization in Bioinformatics from Universidad de Málaga; Master's degree in Software Engineering and Artificial Intelligence from Universidad de Málaga; and Ph.D. in Computer Science from Universidad de Málaga. My professional experience spans 5 years and 7 months at Universidad de Málaga. This is complemented by research stays of 2 months at Kiyono Lab, belonging to GSES, belonging to The University of Osaka, located in Toyonaka, Japan; 1 month at INAB, belonging to Centre for Research and Technology Hellas, located in Thessaloniki, Greece; 1 month at ORKAD, belonging to CRISTAL, belonging to Université de Lille, located in Lille, France; 3 months at Athena Research and Innovation Center in Information, Communication and Knowledge Technologies, located in Athens, Greece; and 3 months at ORKAD, belonging to CRISTAL, belonging to Université de Lille, located in Lille, France, for a total of 10 months abroad.

My research output includes 6 journal papers and 1 conference paper. The publication record includes 2 papers in international collaboration and 1 paper in national collaboration. Within funded research projects, my roles include working team member in 4 research projects. I have reviewed 15 manuscripts for scientific journals.

The software portfolio includes 16 software projects and 4 published packages. The public software portfolio spans 15 repositories, with 64 stars and 3 forks. Package usage records 21,100 downloads.

My teaching activity includes 4 academic years at Universidad de Málaga, amounting to 180 classroom hours, 4 academic years, 8 courses, and 4 degree programmes. This teaching activity began in the 2022/2023 academic year at Universidad de Málaga, when I was the youngest lecturer to take on teaching duties in the Department of Languages and Computer Science, a fact later acknowledged in a 2026 recommendation letter signed by the Director of the ETSII de la UMA. It also includes 1 teaching innovation project. Academic supervision includes 1 final degree project and 1 external internship.

Scientific dissemination activity covers 2 scientific dissemination articles, 2 presentations, 27 press items, 17 social media items, and 1 TV media item. Press coverage spans 14 outlets. Social media items with available metrics account for 68,300 views, with the highest recorded item reaching 38,700 views.

This academic trajectory has been recognized and supported through honors: Master's End-of-Program Extraordinary Award Profesor José María Troya Linero; Bachelor's End-of-Program Extraordinary Award Profesor José María Troya Linero; Destacad@s Awards 2021; and Award for the Best High School Academic Record; grants: D2 research stay grant, covering Postdoctoral Researcher (International Stay) at The University of Osaka; IMMUNO-model COST Action STSM grant, covering Postdoctoral Researcher (International Stay) at Centre for Research and Technology Hellas; ROAR-NET COST Action mobility grant, covering Postdoctoral Researcher (International Stay) at Université de Lille; FPU mobility grant, covering Postdoctoral Researcher (International Stay) at Athena Research and Innovation Center in Information, Communication and Knowledge Technologies; FPU mobility grant, covering Predoctoral Researcher (International Stay) at Université de Lille; and Predoctoral grant (FPU), covering PhD candidate - FPU Fellowship at Universidad de Málaga and Postdoctoral researcher - FPU-POP Fellowship at Universidad de Málaga.

Education

PHD	
Title:	Ph.D. in Computer Science
Date:	2022-10 - 2025-12
Institution:	Universidad de Málaga
Program:	Programa Oficial de Doctorado en Tecnologías Informáticas
Grade:	Outstanding (Cum Laude) with International Mention
Doctoral thesis:	Context-Guided Computational Methods for the Consensus Inference of Gene Regulatory Networks and the Detection of Co-expression Patterns
Grants:	Predoctoral grant (FPU)

MSC

Title: Master's degree in Software Engineering and Artificial Intelligence
Date: 2021-10 - 2022-07
Institution: [Universidad de Málaga](#)
Grade: 9.67/10 (With Honors in 6 subjects)
Final Master Project: New advances in evolutionary machine learning for gene regulatory network inference
Honors: [Master's End-of-Program Extraordinary Award Profesor José María Troya Linero](#)

BSC

Title: Bachelor's Degree in Health Engineering with a specialization in Bioinformatics
Date: 2017-10 - 2021-07
Institution: [Universidad de Málaga](#)
Grade: 8.89/10 (With Honors in 17 subjects)
Final Degree Project: Design of a workflow for the analysis of massive sequencing data
Honors: [Bachelor's End-of-Program Extraordinary Award Profesor José María Troya Linero](#), [Destacad@s Awards 2021](#)

Experience

[Khaos Research](#)

Málaga, Andalusia, Spain · 2021-07 - Present · 5 years and 3 months

Associate Team Coordinator <- Associate Software Engineer <- Junior Software Engineer

○ Associate Team Coordinator

Part-time · 2025-12 - Present · 10 months

○ Associate Software Engineer

Part-time · 2022-12 - 2025-12 · 3 years and 1 month

Tasks:

- Developed a workflow orchestration tool in Go with SQLite storage, JSON/YAML component definitions, and Kubernetes and Nomad execution support.
- Administered computational resources using Proxmox and vSphere for deployment, maintenance, and monitoring of virtual machines.
- Processed multisource satellite imagery from Sentinel-2, PlanetScope, and Landsat, including download automation, temporal composites, spectral indices, and band manipulation.
- Developed Gradio interfaces for remote sensing model execution and result visualization.
- Maintained OpenProject installations, upgrades, deployments, and project-management workflows.

○ Junior Software Engineer

Full-time · 2021-07 - 2022-12 · 1 year and 6 months

Tasks:

- Developed Progressive Web Applications with Next.js and MongoDB for crop sample data recording and analysis.
- Encapsulated Python, Java, and R scripts into Docker containers for EnBiC2-Lab components.
- Developed an evolutionary algorithm with JMetal and EPANET simulations to predict irrigation connector properties.
- Contributed to Angular interfaces for scientific workflow execution.
- Managed project tasks and coordination through OpenProject.

[Universidad de Málaga](#)

Málaga, Andalusia, Spain · 2022-12 - Present · 3 years and 10 months

Postdoctoral researcher - FPU-POP Fellowship <- PhD candidate - FPU Fellowship

○ Postdoctoral researcher - FPU-POP Fellowship

Full-time · 2025-12 - Present · 10 months

Lenguajes y Ciencias de la Computación (LCC)

Grants: [Predoctoral grant \(FPU\)](#)

○ PhD candidate - FPU Fellowship

Full-time · 2022-12 - 2025-12 · 3 years and 1 month

Lenguajes y Ciencias de la Computación (LCC)

Grants: [Predoctoral grant \(FPU\)](#)

Tasks:

- Designed evolutionary algorithms and hybrid artificial intelligence methods for bioinformatics problems.
- Integrated over 25 gene regulatory network inference techniques in reproducible Docker environments and PyPI packages.
- Developed asynchronous and parallel evolutionary algorithms for biologically informed network consensus.
- Implemented multi-objective biclustering algorithms for clinical and genomic data.
- Published results in peer-reviewed journals and presented work at conferences with open-source reproducibility assets.
- Taught 8 undergraduate courses across 4 degree programmes over 4 academic years.
- Supervised 1 Bachelor's thesis and 1 external internship.

Laboratorio de Biología Molecular del Cáncer

Málaga, Andalusia, Spain · 2021-03 - 2021-06 · 4 months

Student Trainee

Student Trainee

Internship · 2021-03 - 2021-06 · 4 months

Tasks:

- Developed an automated NGS analysis pipeline for tumor samples on the Picasso supercomputer.
- Programmed Bash and R scripts with GNU Parallel for large-scale sample processing.
- Integrated FastQC, MultiQC, Qualimap, and vcftoolz compare for quality control and visualization.
- Evaluated multiple aligners and variant callers to reduce false positives.
- Annotated variants using ANNOVAR, OpenCRAVAT, MyVariant, and biomedical databases.
- Detected copy number alterations and gene fusions with unified R reporting.

Research Stays

INTERNATIONAL STAY

Title: Postdoctoral Researcher (International Stay)
Date: 2026-10 - 2026-11
Institution: [The University of Osaka](#), [Graduate School of Engineering Science](#), [Kiyono Lab](#)
Additional information: Toyonaka, Japan
Purpose: Postdoctoral research
Description: Postdoctoral international stay at Kiyono Lab, Graduate School of Engineering Science, The University of Osaka.
Grants: [D2 research stay grant](#)

INTERNATIONAL STAY

Title: Postdoctoral Researcher (International Stay)
Date: 2026-09 - 2026-09
Institution: [Centre for Research and Technology Hellas](#), [INAB|CERTH](#)
Additional information: Themi, Greece
Purpose: Postdoctoral research
Description: Postdoctoral international stay at the Institute of Applied Biosciences of CERTH.
Grants: [IMMUNO-model COST Action STSM grant](#)

INTERNATIONAL STAY

Title: Postdoctoral Researcher (International Stay)
Date: 2026-07 - 2026-07
Institution: [Université de Lille](#), [CRIStAL](#), [ORKAD](#)
Additional information: Lille, France
Purpose: Postdoctoral research
Description: Postdoctoral international stay at the CRIStAL centre of the University of Lille focused on quality-diversity evolutionary biclustering and reproducible experimentation for heterogeneous data.
Grants: [ROAR-NET COST Action mobility grant](#)

INTERNATIONAL STAY

Title: Postdoctoral Researcher (International Stay)
Date: 2026-04 - 2026-06
Institution: [Athena Research Center](#)
Additional information: Athens, Greece
Purpose: Postdoctoral research
Description: Postdoctoral international stay at Athena Research Center focused on reproducible benchmark workflows for gene regulatory network discovery and evaluation.
Grants: [FPU mobility grant](#)

INTERNATIONAL STAY

Title: Predoctoral Researcher (International Stay)
Date: 2024-04 - 2024-06
Institution: [Université de Lille](#), [CRIStAL](#), [ORKAD](#)
Additional information: Lille, France
Purpose: Doctorate
Description: Predoctoral international stay at the CRIStAL centre of the University of Lille.
Grants: [FPU mobility grant](#)

Publications

JOURNAL PAPER

Publication: [Deciphering the Influence of Gut Microbiome Disruption on Human Health Through Multi-Algorithm Approaches](#)
Date: 2026-05-09
Authors: Bohdan Vodianyuk, María Luisa Antequera-Gómez, Adrián Segura-Ortiz, Anton Popov, José García-Nieto, Ismael Navas-Delgado
Journal: Current Bioinformatics
Publisher: Bentham Science Publishers Ltd.
DOI: [10.2174/0115748936437763260125211015](#)
Organizations: [Khaos Research](#), [ITIS](#), [Universidad de Málaga](#), [IBIMA Plataforma BIONAND](#), [Instituto de Ingeniería Oceánica](#), [National Technical University of Ukraine "Igor Sikorsky Kyiv Polytechnic Institute"](#)
Positions: [Associate Team Coordinator](#), [Postdoctoral researcher - FPU-POP Fellowship](#)
Grants: [Predoctoral grant \(FPU\)](#)

JOURNAL PAPER

Publication: [Multi-Objective Consensus Optimization for Gene Regulatory Networks Inference: A Preference-Based Approach](#)
Date: 2025-12-06
Authors: Adrián Segura Ortiz, Antonio Jesús Nebro Urbaneja, José Manuel García Nieto, José Francisco Aldana Montes
Journal: Computational Biology and Chemistry
Publisher: Elsevier
DOI: [10.1016/j.compbiolchem.2025.108827](#)
Organizations: [Khaos Research](#), [ITIS](#), [Universidad de Málaga](#), [IBIMA Plataforma BIONAND](#)
Software: [PBEvoGen](#)
Positions: [PhD candidate - FPU Fellowship](#)
Grants: [Predoctoral grant \(FPU\)](#)

JOURNAL PAPER

Publication: [Multifaceted evolution focused on maximal exploitation of domain knowledge for the consensus inference of Gene Regulatory Networks](#)
Date: 2025-09-01
Authors: Adrián Segura Ortiz, Karen Giménez Orenga, José Manuel García Nieto, Elisa Oltra, José Francisco Aldana Montes
Journal: Computers in Biology and Medicine
Publisher: Elsevier
DOI: [10.1016/j.combiomed.2025.110632](#)
Organizations: [Khaos Research](#), [ITIS](#), [Universidad de Málaga](#), [IBIMA Plataforma BIONAND](#), [Universidad Católica de Valencia San Vicente Mártir](#)
Software: [BIO-INSIGHT](#)
Positions: [PhD candidate - FPU Fellowship](#)
Grants: [Predoctoral grant \(FPU\)](#)

JOURNAL PAPER

Publication: [Exhaustive biclustering driven by self-learning evolutionary approach for biomedical data](#)
Date: 2025-05-29
Authors: Adrián Segura Ortiz, Adán José García, Laetitia Jourdan, José Manuel García Nieto
Journal: Computer Methods and Programs in Biomedicine
DOI: [10.1016/j.cmpb.2025.108846](#)
Organizations: [Khaos Research](#), [ITIS](#), [Universidad de Málaga](#), [IBIMA Plataforma BIONAND](#), [Université de Lille](#), [CRISTAL](#), [ORKAD](#), [INFINITE](#)
Software: [MOEBA-BIO](#)
Positions: [PhD candidate - FPU Fellowship](#)
Stays: [Predoctoral Researcher \(International Stay\)](#)
Grants: [Predoctoral grant \(FPU\)](#), [FPU mobility grant](#)

JOURNAL PAPER

Publication: [Multi-objective context-guided consensus of a massive array of techniques for the inference of Gene Regulatory Networks](#)
Date: 2024-09-16
Authors: Adrián Segura Ortiz, José Manuel García Nieto, José Francisco Aldana Montes, Ismael Navas Delgado
Journal: Computers in Biology and Medicine
DOI: [10.1016/j.combiomed.2024.108850](#)
Organizations: [Khaos Research](#), [ITIS](#), [Universidad de Málaga](#), [IBIMA Plataforma BIONAND](#)
Software: [MO-GENECI](#)
Positions: [PhD candidate - FPU Fellowship](#)
Grants: [Predoctoral grant \(FPU\)](#)

CONFERENCE PAPER	
Publication:	Exploiting medical-expert knowledge via a novel memetic algorithm for the inference of gene regulatory networks
Date:	2024-06-28
Authors:	Adrián Segura Ortiz, José Manuel García Nieto, José Francisco Aldana Montes
Conference:	International Conference on Computational Science
Publisher:	Springer Nature Switzerland
DOI:	10.1007/978-3-031-63772-8_1
Organizations:	Khaos Research , ITIS , Universidad de Málaga , IBIMA Plataforma BIONAND
Software:	Memetic-GENECI
Positions:	PhD candidate - FPU Fellowship
Grants:	Predoctoral grant (FPU)
JOURNAL PAPER	
Publication:	GENECI: A novel evolutionary machine learning consensus-based approach for the inference of gene regulatory networks
Date:	2023-02-14
Authors:	Adrián Segura Ortiz, José Manuel García Nieto, José Francisco Aldana Montes, Ismael Navas Delgado
Journal:	Computers in Biology and Medicine
DOI:	10.1016/j.combiomed.2023.106653
Organizations:	Khaos Research , ITIS , Universidad de Málaga , IBIMA Plataforma BIONAND
Software:	Single-GENECI
Positions:	PhD candidate - FPU Fellowship
Grants:	Predoctoral grant (FPU)

Research Projects

WORKING TEAM MEMBER	
Title:	Andalucía ISI2A2: Infraestructura y Servicios de Integración e Inteligencia de Datos en el sector de la Agroalimentación en Andalucía
Institution:	Universidad de Málaga
Additional information:	DGP_PIDI_2024_01174
Funders:	Plan Andaluz de Investigación
Principal investigators:	José Francisco Aldana Montes, José Manuel García Nieto
WORKING TEAM MEMBER	
Title:	KOSMOS: Potenciando los Ecosistemas de Compartición de Datos Federados con un Enfoque Multidimensional
Date:	2025-09-01 - Present
Institution:	Universidad de Málaga
Additional information:	PID2024-155363OB-C41
Funders:	Plan Nacional de Proyectos de Generación de Conocimiento
Principal investigators:	José Francisco Aldana Montes, José Manuel García Nieto
WORKING TEAM MEMBER	
Title:	Aether: Una aproximación holística de smart data para el análisis de datos guiado por el contexto: explotación de semántica y contexto
Date:	2021-01-01 - 2024-12-31
Institution:	Universidad de Málaga
Additional information:	PID2020-112540RB-C41
Funders:	Agencia Estatal de Investigación
Principal investigators:	José Francisco Aldana Montes, Ismael Navas Delgado
WORKING TEAM MEMBER	
Title:	EnBiC2-Lab: Environmental and Biodiversity Climate Change Lab
Date:	2019-01-01 - 2023-06-30
Institution:	Universidad de Málaga
Additional information:	LifeWatch-2019-11-UMA-01
Funders:	FEDER
Principal investigators:	Juan Teodomiro López Navarrete

Honors

HONOR	
Title:	Master's End-of-Program Extraordinary Award Profesor José María Troya Linero
Date:	2023-07
Additional information:	Universidad de Málaga
Context:	Award for the top academic record in the Master's in Software Engineering and Artificial Intelligence.
Related education:	<u>Master's degree in Software Engineering and Artificial Intelligence</u>
HONOR	
Title:	Bachelor's End-of-Program Extraordinary Award Profesor José María Troya Linero
Date:	2022-07
Additional information:	Universidad de Málaga
Context:	Award for the best academic record in the Bachelor's in Health Engineering program, considering both specializations.
Related education:	<u>Bachelor's Degree in Health Engineering with a specialization in Bioinformatics</u>
HONOR	
Title:	Destacad@s Awards 2021
Date:	2021-11
Additional information:	BBVA, Diario Sur
Context:	Recognition as one of the top three academic records at the School of Computer Engineering for the graduating class of 2020/2021.
Related education:	<u>Bachelor's Degree in Health Engineering with a specialization in Bioinformatics</u>
HONOR	
Title:	Award for the Best High School Academic Record
Date:	2017-06
Additional information:	Málaga City Council, Education Department
Context:	9th City of Málaga Education Awards.

Grants

PUBLIC	
Title:	D2 research stay grant
Date:	2026-07
Additional information:	Universidad de Málaga
Purpose:	Postdoctoral mobility
Period:	2026-10 - 2026-11
Related stays:	<u>Postdoctoral Researcher (International Stay)</u>
INTERNATIONAL NETWORK	
Title:	IMMUNO-model COST Action STSM grant
Additional information:	COST Action CA21135 - Modelling immunotherapy response and toxicity in cancer (IMMUNO-model)
Purpose:	Postdoctoral mobility
Period:	2026-09 - 2026-09
Related stays:	<u>Postdoctoral Researcher (International Stay)</u>
INTERNATIONAL NETWORK	
Title:	ROAR-NET COST Action mobility grant
Date:	2026-07
Additional information:	COST Action CA22137 - Randomised Optimisation Algorithms Research Network (ROAR-NET)
Purpose:	Postdoctoral mobility
Period:	2026-07 - 2026-07
Related stays:	<u>Postdoctoral Researcher (International Stay)</u>
PUBLIC	
Title:	FPU mobility grant
Additional information:	Ministerio de Ciencia e Innovación. Universidades
Purpose:	Postdoctoral mobility
Period:	2026-04 - 2026-06
Related stays:	<u>Postdoctoral Researcher (International Stay)</u>

PUBLIC	
Title:	FPU mobility grant
Date:	2024-03
Additional information:	Ministerio de Ciencia e Innovación. Universidades
Purpose:	Postdoctoral mobility
Period:	2024-06
Related stays:	<u>Predoctoral Researcher (International Stay)</u>

PUBLIC	
Title:	Predoctoral grant (FPU)
Date:	2022-12
Additional information:	Ministry of Science, Innovation and Universities
Purpose:	Predoctoral research funding
Period:	2022-12 - Present
Related positions:	<u>PhD candidate - FPU Fellowship</u> , <u>Postdoctoral researcher - FPU-POP Fellowship</u>

Certifications

CERTIFICATION	
Title:	Jornadas de Formación, Mejora e Investigación Docente
Date:	2025-07
Institution:	<u>Universidad de Málaga</u>
Additional information:	Universidad de Málaga
Duration:	10 hours
Notes:	Teacher training and educational innovation course.

CERTIFICATION	
Title:	IMFAHE International Mentor Program Student Certificate (2024-2025)
Date:	2025-06
Institution:	<u>IMFAHE</u>
Additional information:	IMFAHE

CERTIFICATION	
Title:	Introduction to the Use of Generative Artificial Intelligence in University Teaching
Date:	2023-10
Institution:	<u>Universidad de Málaga</u>
Additional information:	Universidad de Málaga
Duration:	12 hours
Notes:	University teaching certification.

CERTIFICATION	
Title:	Boost Your Future - Professional Development Workshop
Date:	2017-09
Institution:	<u>ESESA</u>
Additional information:	ESESA

CERTIFICATION	
Title:	Cambridge English: Preliminary (PET) - Level B1
Date:	2015-07
Institution:	<u>University of Cambridge</u>
Additional information:	University of Cambridge

Teaching

180 Classroom hours	4 Academic years	8 Courses
4 Degree programmes	2 Supervisions	1 Teaching innovation projects

University Classes

UNIVERSITY CLASS

Title: Biología de Sistemas
Date: 2025/2026
Institution: [Universidad de Málaga](#)
Degree programme: Grado en Ingeniería de la Salud
Department: Lenguajes y Ciencias de la Computación (LCC)
Hours: 9.9

UNIVERSITY CLASS

Title: Análisis y Diseño de Algoritmos
Date: 2025/2026
Institution: [Universidad de Málaga](#)
Degree programme: Grado en Ingeniería Informática
Department: Lenguajes y Ciencias de la Computación (LCC)
Hours: 18

UNIVERSITY CLASS

Title: Diseño y Explotación de Almacenes de Datos
Date: 2024/2025
Institution: [Universidad de Málaga](#)
Degree programme: Grado en Ingeniería Informática
Department: Lenguajes y Ciencias de la Computación (LCC)
Hours: 18

UNIVERSITY CLASS

Title: Análisis y Diseño de Algoritmos
Date: 2024/2025
Institution: [Universidad de Málaga](#)
Degree programme: Grado en Ingeniería del Software
Department: Lenguajes y Ciencias de la Computación (LCC)
Hours: 6

UNIVERSITY CLASS

Title: Análisis y Diseño de Algoritmos
Date: 2024/2025
Institution: [Universidad de Málaga](#)
Degree programme: Grado en Ingeniería Informática
Department: Lenguajes y Ciencias de la Computación (LCC)
Hours: 36

UNIVERSITY CLASS

Title: Estándares de Datos
Date: 2023/2024
Institution: [Universidad de Málaga](#)
Degree programme: Grado en Ingeniería de la Salud
Department: Lenguajes y Ciencias de la Computación (LCC)
Hours: 44.9

UNIVERSITY CLASS

Title: Informática
Date: 2023/2024
Institution: [Universidad de Málaga](#)
Degree programme: Grado en Biología
Department: Lenguajes y Ciencias de la Computación (LCC)
Hours: 11.2

UNIVERSITY CLASS

Title: Bases de Datos
Date: 2022/2023
Institution: [Universidad de Málaga](#)
Degree programme: Grado en Ingeniería de la Salud
Department: Lenguajes y Ciencias de la Computación (LCC)
Hours: 36

Academic Supervision

EXTERNAL INTERNSHIP TUTORING

Title:	External extracurricular internship tutoring
Date:	2025-10
Institution:	Universidad de Málaga
Degree programme:	Grado en Bioquímica
Role:	External internship tutor
Hours:	300

FINAL DEGREE PROJECT SUPERVISION

Title:	Optimización multi-objetivo para biclustering en datos de expresión génica
Date:	2025-06
Institution:	Universidad de Málaga
Degree programme:	Grado en Ingeniería de la Salud
Role:	Co-supervisor
Repository:	Repository

Teaching Innovation Projects

WORKING TEAM MEMBER

Title:	PIE22-114: Grupos Permanentes de Innovación Educativa en el Desarrollo de Nuevas Competencias Orientadas a la Mejora de la Empleabilidad del Alumnado en el Ámbito Universitario
Date:	2023-01-01 - 2024-12-31
Institution:	Universidad de Málaga
Funding entity:	Universidad de Málaga

Software

16 Software projects	4 Published packages	25 Research domains
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Software Projects

SOFTWARE PROJECT

Title:	SPATHI
Additional information:	Similarity-weighted Population-Aware Transcriptional Heterogeneity Inference
Description:	Python tool for inferring group-specific gene regulatory networks from single-cell RNA-seq data by weighting cells according to their transcriptomic proximity to each target population.
Domains:	Single-cell RNA sequencing, Gene regulatory network inference, Transcriptomic heterogeneity

SOFTWARE PROJECT

Title:	SALVI
Description:	Component-oriented framework for quality-diversity biclustering of heterogeneous data with reproducible pipelines, monitoring, and explainable bicluster outputs.
Domains:	Evolutionary biclustering, Quality-diversity optimization, Heterogeneous data analysis

SOFTWARE PROJECT

Title:	ANDREA
Additional information:	Automated Network Discovery, Reproducible Evaluation and Analysis
Description:	Platform for aggregated network discovery, simulation, inference, and benchmarking workflows.
Domains:	Network discovery, Simulation workflows, Benchmarking

SOFTWARE PROJECT

Title:	AMIGA
Additional information:	Autonomous Multi-objective Individual GRN Assessment
Description:	Python package for learning-to-rank post-Pareto selection of consensus gene regulatory networks.
Domains:	Gene regulatory network inference, Learning to rank, Multi-objective optimization

SOFTWARE PROJECT

Title:	GENECI
Additional information:	GEne NETwork Consensus Inference
Description:	Repository for the GENECI software ecosystem for consensus inference of gene regulatory networks.
Domains:	Gene regulatory network inference, Bioinformatics

SOFTWARE PROJECT	
Title:	<u>PBEvoGen</u>
Additional information:	Preference-Based Evolutionary Gene Network Inference
Description:	Preference-guided multi-objective consensus optimization framework for gene regulatory network inference.
Domains:	Gene regulatory network inference, Preference-based optimization, Bioinformatics
SOFTWARE PROJECT	
Title:	<u>MOEBA-BIO</u>
Additional information:	Multi-Objective Evolutionary Biclustering Algorithm for BIOmedical applications
Description:	Java framework for evolutionary biclustering in biomedical data with domain-knowledge integration and self-configuration of biclustering parameters.
Domains:	Evolutionary biclustering, Biomedical data, Domain knowledge integration
SOFTWARE PROJECT	
Title:	<u>Memetic-GENECI</u>
Additional information:	Memetic GENE Network Consensus Inference
Description:	Software project derived from Single-GENECI with a local search phase guided by known interactions.
Domains:	Gene regulatory network inference, Memetic algorithms, Bioinformatics
SOFTWARE PROJECT	
Title:	<u>BIO-INSIGHT</u>
Additional information:	Biologically Informed Optimizator - INtegrating Software to INfer Grns by Holistic Thinking
Description:	Software project for biologically informed consensus inference of gene regulatory networks using many-objective evolutionary optimization.
Domains:	Gene regulatory network inference, Evolutionary algorithms, Bioinformatics
SOFTWARE PROJECT	
Title:	<u>MO-GENECI</u>
Additional information:	Multi-Objective GENE Network Consensus Inference
Description:	Software project for multi-objective consensus inference of gene regulatory networks using confidence levels, topology, and recurrent biological motifs.
Domains:	Gene regulatory network inference, Multi-objective optimization, Bioinformatics
SOFTWARE PROJECT	
Title:	<u>Hector</u>
Additional information:	Software tool for workflow orchestration
Description:	Workflow orchestrator that records grouped topological order for workflows and controls execution from component and definition specifications.
Domains:	Workflow orchestration, Research software
SOFTWARE PROJECT	
Title:	<u>Single-GENECI</u>
Additional information:	Single-Objective GENE Network Consensus Inference
Description:	Software project implementing an evolutionary algorithm to determine an optimal ensemble of machine learning techniques for gene regulatory network inference.
Domains:	Gene regulatory network inference, Evolutionary machine learning, Bioinformatics
SOFTWARE PROJECT	
Title:	<u>PsycoTreat</u>
Description:	Application for registration and treatment workflows for patients associated with mental health centers, including roles, appointments, diagnoses, medication search, and messaging.
Domains:	Health software, Patient management
SOFTWARE PROJECT	
Title:	<u>PrimerDesigner</u>
Description:	Program for designing an optimal universal primer with maximum hybridization over aligned FASTA sequences.
Domains:	Primer design, Bioinformatics
SOFTWARE PROJECT	
Title:	<u>KmerCounter</u>
Description:	Java project for k-mer frequency analysis in FASTA and multi-FASTA files.
Domains:	K-mer analysis, Bioinformatics

SOFTWARE PROJECT	
Title:	DNATranslatorAnalyzer
Description:	DNA sequence analyzer for reverse and reverse-complement construction, nucleotide frequency calculation, six-frame translation, and stop-codon fragment detection.
Domains:	DNA sequence analysis, Bioinformatics

Software Packages

PYPI	
Title:	GENECI
Package name:	geneci
Summary:	Software package whose main functionality consists of an evolutionary algorithm to determine the optimal ensemble of machine learning techniques for genetic network inference based on the confidence levels and topological characteristics of its results.
Latest version:	4.0.1.2
Releases:	6
License:	MIT
Total downloads:	19,430
Download period:	2022-06-01 - 2026-09-01
Requires Python:	<3.11,>=3.10.7
Downloads dashboard:	ClickPy

MAVEN	
Title:	MOEBA-BIO
Coordinate:	io.github.adrianseguraortiz:moeba-bio
Summary:	MOEBA-BIO: Multi-Objective Evolutionary Biclustering Algorithm for BIOmedical applications.
Latest version:	1.0.0
Releases:	1
License:	MIT License
Last updated:	2026-02-05
Java release:	11
Dependencies:	14
Project URL:	https://github.com/adrianseguraortiz/MOEBA-BIO
Maven Repository:	MvnRepository

PYPI	
Title:	AMIGA
Package name:	amiga-grn
Summary:	Learning-to-rank for post-Pareto selection of consensus gene regulatory networks
Latest version:	0.1.0
Releases:	1
License:	MIT
Total downloads:	774
Download period:	2026-06-01 - 2026-09-01
Requires Python:	<3.14,>=3.11
Downloads dashboard:	ClickPy

PYPI	
Title:	ANDREA
Package name:	ANDREA
Summary:	Platform for aggregated network discovery, simulation, inference, and benchmarking workflows.
Latest version:	0.1.0
Releases:	1
Total downloads:	896
Download period:	2026-06-01 - 2026-09-01
Requires Python:	<3.14,>=3.11
Downloads dashboard:	ClickPy

Dissemination		
49 Dissemination items	2 Scientific articles	2 Presentations
27 Press items	17 Social media items	1 TV media items
68,300 Known social views		
Highest known social media item: 38,700 views		

Scientific Dissemination Articles

ARTICLE

Title: [MOEBA-BIO: An Open and Extensible Framework for Evolutionary Biclustering in Biomedicine](#)
Date: 2026-04-13
Additional information: ERCIM News · Issue 144
Publications: [Exhaustive biclustering driven by self-learning evolutionary approach for biomedical data](#)
Software packages: [MOEBA-BIO](#)

ARTICLE

Title: [Context-Guided Evolutionary Algorithms for Consensus Inference of Gene Regulatory Networks](#)
Date: 2026-01-30
Additional information: ERCIM News · Issue 143
Publications: [GENECI: A novel evolutionary machine learning consensus-based approach for the inference of gene regulatory networks](#), [Exploiting medical-expert knowledge via a novel memetic algorithm for the inference of gene regulatory networks](#), [Multi-objective context-guided consensus of a massive array of techniques for the inference of Gene Regulatory Networks](#), [Multifaceted evolution focused on maximal exploitation of domain knowledge for the consensus inference of Gene Regulatory Networks](#), [Multi-Objective Consensus Optimization for Gene Regulatory Networks Inference: A Preference-Based Approach](#)
Software packages: [GENECI](#)

Presentations

REGIONAL CONGRESS PRESENTATION

Title: Optimización del Consenso de Múltiples Técnicas de Inferencia de Redes de Regulación Génica Desde una Perspectiva Holística Guiada por el Contexto Biológico de los Datos
Date: 2025-05-12 - 2025-05-14
Additional information: Jornadas Andaluzas de Bioinformática (JABI 2025) · Málaga, Spain
Publications: [GENECI: A novel evolutionary machine learning consensus-based approach for the inference of gene regulatory networks](#), [Exploiting medical-expert knowledge via a novel memetic algorithm for the inference of gene regulatory networks](#), [Multi-objective context-guided consensus of a massive array of techniques for the inference of Gene Regulatory Networks](#), [Multifaceted evolution focused on maximal exploitation of domain knowledge for the consensus inference of Gene Regulatory Networks](#)
Software packages: [GENECI](#)

CONFERENCE PRESENTATION

Title: Exploiting medical-expert knowledge via a novel memetic algorithm for the inference of gene regulatory networks
Date: 2024-07-02 - 2024-07-04
Additional information: International Conference on Computational Science (ICCS 2024) · Málaga, Andalucía, Spain
Publications: [Exploiting medical-expert knowledge via a novel memetic algorithm for the inference of gene regulatory networks](#)
Software packages: [GENECI](#)

Press

IDESCUBRE

Title: [Un mapa para leer los virus del intestino](#)
Date: 2026-07-29
Publications: [Deciphering the Influence of Gut Microbiome Disruption on Human Health Through Multi-Algorithm Approaches](#)

LA OPINIÓN DE MÁLAGA

Title: [Una inteligencia artificial desarrollada en Málaga analiza los virus del intestino y detecta posibles desequilibrios](#)
Date: 2026-07-29
Publications: [Deciphering the Influence of Gut Microbiome Disruption on Human Health Through Multi-Algorithm Approaches](#)

20 MINUTOS

Title: [Desarrollan un "mapa inteligente" para identificar virus asociados a la salud digestiva](#)
Date: 2026-07-29
Publications: [Deciphering the Influence of Gut Microbiome Disruption on Human Health Through Multi-Algorithm Approaches](#)

FUNDACIÓN DESCUBRE

Title: [Desarrollan un 'mapa inteligente' para identificar virus asociados a la salud digestiva](#)
Date: 2026-07-29
Publications: [Deciphering the Influence of Gut Microbiome Disruption on Human Health Through Multi-Algorithm Approaches](#)

NOVA CIENCIA	
Title:	Crean el mapa de los virus del estómago que ayuda a detectar desequilibrios en la salud digestiva
Date:	2026-07-29
Publications:	Deciphering the Influence of Gut Microbiome Disruption on Human Health Through Multi-Algorithm Approaches
LA NOCIÓN	
Title:	PBEvoGen, una nueva metodología que permite al investigador orientar el proceso computacional y reducir el tiempo de cálculo
Date:	2026-05-26
Publications:	Multi-Objective Consensus Optimization for Gene Regulatory Networks Inference: A Preference-Based Approach
NOVA CIENCIA	
Title:	La metodología que reduce el tiempo de cálculo en las investigaciones científicas
Date:	2026-05-26
Publications:	Multi-Objective Consensus Optimization for Gene Regulatory Networks Inference: A Preference-Based Approach
EUROPA PRESS	
Title:	'PBEvoGen', una nueva metodología que permite al investigador orientar el proceso computacional y reducir el tiempo de cálculo
Date:	2026-05-26
Publications:	Multi-Objective Consensus Optimization for Gene Regulatory Networks Inference: A Preference-Based Approach
UMA DIVULGA	
Title:	Cómo combinar inteligencia artificial y conocimiento experto para inferir redes genéticas
Date:	2026-05-26
Publications:	Multi-Objective Consensus Optimization for Gene Regulatory Networks Inference: A Preference-Based Approach
UNIVERSIDAD DE MÁLAGA	
Title:	'PBEvoGen', una nueva metodología que permite al investigador orientar el proceso computacional y reducir el tiempo de cálculo
Date:	2026-05-26
Publications:	Multi-Objective Consensus Optimization for Gene Regulatory Networks Inference: A Preference-Based Approach
IBIMA	
Title:	Cómo combinar inteligencia artificial y conocimiento experto para inferir redes genéticas
Date:	2026-05-26
Publications:	Multi-Objective Consensus Optimization for Gene Regulatory Networks Inference: A Preference-Based Approach
NOVA CIENCIA	
Title:	Así funciona el sistema inteligente que analiza los genes implicados en la fatiga crónica
Date:	2025-07-27
Publications:	Multifaceted evolution focused on maximal exploitation of domain knowledge for the consensus inference of Gene Regulatory Networks
SALUD A DIARIO	
Title:	Un nuevo sistema 'inteligente' analiza los genes implicados en la fatiga crónica
Date:	2025-07-27
Publications:	Multifaceted evolution focused on maximal exploitation of domain knowledge for the consensus inference of Gene Regulatory Networks
IDESCUBRE	
Title:	Inteligencia artificial para dar 'voz genética' a la fibromialgia y a la fatiga crónica
Date:	2025-07-25
Publications:	Multifaceted evolution focused on maximal exploitation of domain knowledge for the consensus inference of Gene Regulatory Networks
EUROPA PRESS	
Title:	Desarrollan un sistema "inteligente" que analiza los genes implicados en enfermedades como la fatiga crónica
Date:	2025-07-25
Publications:	Multifaceted evolution focused on maximal exploitation of domain knowledge for the consensus inference of Gene Regulatory Networks
EUROPA PRESS	
Title:	La Universidad de Málaga desarrolla un software de código abierto para descubrir estructuras ocultas en datos biomédicos
Date:	2025-07-09
Publications:	Exhaustive biclustering driven by self-learning evolutionary approach for biomedical data

NOVA CIENCIA	
Title:	Una herramienta revolucionaria para descubrir estructuras ocultas en datos médicos
Date:	2025-07-09
Publications:	Exhaustive biclustering driven by self-learning evolutionary approach for biomedical data
CADENA SER	
Title:	‘MOEBA-BIO’, una nueva herramienta desarrollada en la UMA para descubrir estructuras ocultas en datos biomédicos
Date:	2025-07-09
Publications:	Exhaustive biclustering driven by self-learning evolutionary approach for biomedical data
UNIVERSIDAD DE MÁLAGA	
Title:	‘MOEBA-BIO’, una herramienta para descubrir estructuras ocultas en datos biomédicos
Date:	2025-07-09
Publications:	Exhaustive biclustering driven by self-learning evolutionary approach for biomedical data
UMA DIVULGA	
Title:	Un investigador de la UMA desarrolla una herramienta para descubrir estructuras ocultas en datos biomédicos
Date:	2025-07-09
Publications:	Exhaustive biclustering driven by self-learning evolutionary approach for biomedical data
EUROPA PRESS	
Title:	Desarrollan un algoritmo útil para la comprensión de los procesos celulares implicados en distintas enfermedades
Date:	2024-08-29
Publications:	Multi-objective context-guided consensus of a massive array of techniques for the inference of Gene Regulatory Networks
LA OPINIÓN DE MÁLAGA	
Title:	Investigadores de Málaga crean un algoritmo para entender los procesos celulares implicados en distintas enfermedades
Date:	2024-08-29
Publications:	Multi-objective context-guided consensus of a massive array of techniques for the inference of Gene Regulatory Networks
SALUD A DIARIO	
Title:	Nuevo algoritmo útil para la comprensión de los procesos celulares
Date:	2024-08-29
Publications:	Multi-objective context-guided consensus of a massive array of techniques for the inference of Gene Regulatory Networks
IBIMA	
Title:	Investigadores de IBIMA Plataforma BIONAND y la UMA desarrollan un algoritmo útil para la comprensión de los procesos celulares implicados en distintas enfermedades
Date:	2024-08-29
Publications:	Multi-objective context-guided consensus of a massive array of techniques for the inference of Gene Regulatory Networks
CONSALUD	
Title:	Investigadores del IBIMA emplean una nueva estrategia para comprender cómo interactúan los genes
Date:	2023-08-21
Publications:	GENECI: A novel evolutionary machine learning consensus-based approach for the inference of gene regulatory networks
EUROPA PRESS	
Title:	Investigadores del IBIMA Plataforma Bionand avanzan en la comprensión de la enfermedad a nivel molecular
Date:	2023-08-19
Publications:	GENECI: A novel evolutionary machine learning consensus-based approach for the inference of gene regulatory networks
DIARIO SUR	
Title:	Investigadores del IBIMA Plataforma Bionand avanzan en la comprensión de la enfermedad a nivel molecular
Date:	2023-08-19
Publications:	GENECI: A novel evolutionary machine learning consensus-based approach for the inference of gene regulatory networks
Social Media	
LINKEDIN	
Title:	LinkedIn
Date:	2025-12-19
Accounts:	adrian-segura-ortiz
Description:	LinkedIn post announcing the PBEvoGen article in Computational Biology and Chemistry.
Publications:	Multi-Objective Consensus Optimization for Gene Regulatory Networks Inference: A Preference-Based Approach

LINKEDIN	
Title:	LinkedIn
Date:	2025-07-15
Accounts:	adrian-segura-ortiz
Description:	LinkedIn post announcing the BIO-INSIGHT article in Computers in Biology and Medicine.
Publications:	Multifaceted evolution focused on maximal exploitation of domain knowledge for the consensus inference of Gene Regulatory Networks
LINKEDIN	
Title:	LinkedIn
Date:	2025-07-25
Accounts:	Consejería Universidad, Investigación e Innovación
Description:	LinkedIn post about BIO-INSIGHT as an AI-based system for analyzing gene interactions in complex diseases.
Publications:	Multifaceted evolution focused on maximal exploitation of domain knowledge for the consensus inference of Gene Regulatory Networks
LINKEDIN	
Title:	LinkedIn
Date:	2025-07-25
Accounts:	Fundación Descubre
Description:	LinkedIn post by Fundación Descubre about BIO-INSIGHT and gene analysis in chronic fatigue-related diseases.
Publications:	Multifaceted evolution focused on maximal exploitation of domain knowledge for the consensus inference of Gene Regulatory Networks
X	
Title:	X
Date:	2025-07-26
Accounts:	sombradoble
Description:	X post by Sombradoble about BIO-INSIGHT and AI-based gene analysis in fibromyalgia and ME/CFS.
Publications:	Multifaceted evolution focused on maximal exploitation of domain knowledge for the consensus inference of Gene Regulatory Networks
INSTAGRAM	
Title:	Instagram
Date:	2026-03-19
Accounts:	adriansegura.99
Views:	1,500
Publications:	Multifaceted evolution focused on maximal exploitation of domain knowledge for the consensus inference of Gene Regulatory Networks
INSTAGRAM	
Title:	Instagram
Date:	2026-03-25
Accounts:	salud_ahora_, _ibima, adriansegura.99
Views:	9,200
Publications:	Multifaceted evolution focused on maximal exploitation of domain knowledge for the consensus inference of Gene Regulatory Networks
INSTAGRAM	
Title:	Instagram
Date:	2025-07-25
Accounts:	universidadand, fundaciondescubre, adriansegura.99
Views:	13,400
Publications:	Multifaceted evolution focused on maximal exploitation of domain knowledge for the consensus inference of Gene Regulatory Networks
LINKEDIN	
Title:	LinkedIn
Date:	2025-06-03
Accounts:	adrian-segura-ortiz
Description:	LinkedIn post announcing the MOEBA-BIO journal article and its collaboration with the University of Lille.
Publications:	Exhaustive biclustering driven by self-learning evolutionary approach for biomedical data

LINKEDIN	
Title:	LinkedIn
Date:	2025-07-10
Accounts:	ITIS UMA
Description:	LinkedIn post by ITIS UMA sharing news about MOEBA-BIO as open-source software for biomedical data analysis.
Publications:	Exhaustive biclustering driven by self-learning evolutionary approach for biomedical data
X	
Title:	X
Date:	2025-07-10
Accounts:	itis_uma
Description:	X post by ITIS UMA sharing the UMA news item about MOEBA-BIO.
Publications:	Exhaustive biclustering driven by self-learning evolutionary approach for biomedical data
LINKEDIN	
Title:	LinkedIn
Date:	2024-07-15
Accounts:	adrian-segura-ortiz
Description:	LinkedIn post announcing the MO-GENECI article in Computers in Biology and Medicine.
Publications:	Multi-objective context-guided consensus of a massive array of techniques for the inference of Gene Regulatory Networks
X	
Title:	X
Date:	2024-09-03
Accounts:	itis_uma
Description:	X post by ITIS UMA sharing a video about the MO-GENECI algorithm.
Publications:	Multi-objective context-guided consensus of a massive array of techniques for the inference of Gene Regulatory Networks
INSTAGRAM	
Title:	Instagram
Date:	2024-09-02
Accounts:	_ibima, adriansegura.99
Views:	5,500
Publications:	Multi-objective context-guided consensus of a massive array of techniques for the inference of Gene Regulatory Networks
INSTAGRAM	
Title:	Instagram
Date:	2024-09-02
Accounts:	nath.biohack, adriansegura.99
Views:	38,700
Publications:	Multi-objective context-guided consensus of a massive array of techniques for the inference of Gene Regulatory Networks
LINKEDIN	
Title:	LinkedIn
Date:	2024-07-03
Accounts:	adrian-segura-ortiz
Description:	LinkedIn post announcing the ICCS 2024 paper on a memetic algorithm for gene regulatory network inference.
Publications:	Exploiting medical-expert knowledge via a novel memetic algorithm for the inference of gene regulatory networks
LINKEDIN	
Title:	LinkedIn
Date:	2023-02-15
Accounts:	adrian-segura-ortiz
Description:	LinkedIn post announcing the GENECI article in Computers in Biology and Medicine.
Publications:	GENECI: A novel evolutionary machine learning consensus-based approach for the inference of gene regulatory networks
TV Media	
CANAL MÁLAGA	
Title:	Salud Ahora
Date:	2026-03-18
Publications:	Multifaceted evolution focused on maximal exploitation of domain knowledge for the consensus inference of Gene Regulatory Networks

Reviewing

15 Reviewed manuscripts

8 Journals

BMC

Title: BMC Bioinformatics
Date: 2026-09-04
Reviewed manuscripts: 3 manuscripts

SPRINGER NATURE

Title: Scientific Reports
Date: 2026-08-04
Reviewed manuscripts: 4 manuscripts

SPRINGER NATURE

Title: Archives of Computational Methods in Engineering
Date: 2026-07-17
Reviewed manuscripts: 2 manuscripts

ELSEVIER

Title: Computational Biology and Chemistry
Date: 2026-06-05
Reviewed manuscripts: 1 manuscript

BMC

Title: BioData Mining
Date: 2026-05-03
Reviewed manuscripts: 1 manuscript

ELSEVIER

Title: Knowledge-Based Systems
Date: 2026-02-23
Reviewed manuscripts: 1 manuscript

ELSEVIER

Title: Computational and Structural Biotechnology Journal
Date: 2026-01-13
Reviewed manuscripts: 2 manuscripts

BMC

Title: European Journal of Medical Research
Date: 2025-12-15
Reviewed manuscripts: 1 manuscript