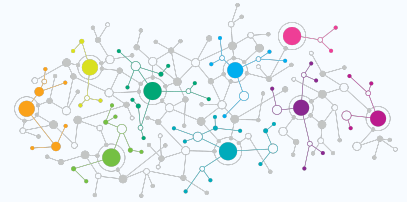# ROBERTO OLAYO ALARCON

Most of my education has been as a student of the **National Autonomous University of Mexico** (**UNAM** for its name in Spanish). Currently, I am a seventh semester student of the Undergraduate Program in Genomic Sciences from this university. **My background consists mainly of a combination of biology, mathematics and computer science.**

Most of my research experience has been in **bioinformatics and biological data analysis**. I believe it is important to tackle one of the most important challenges of our time: Antibiotic Resistance.

Currently, **I am searching for postgraduate opportunities** to progress my career as a researcher. I would like to do research that aims to solve questions dealing with antibiotic resistance through a quantitative/computational approach.

🎓 EDUCATION

2020
|
2016

Bs.C Genomic Sciences
National Autonomous Univeristy of Mexico   📍 Cuernavaca, Mexico

· Current general grade: 9.83/10
· Four-year bachelor's program. Combined background of biology, mathematics and informatics.

📖 PUBLICATIONS

2019

GeDex: A consensus Gene-disease Event Extraction System based on frequency patterns and supervised learning
Currently under review.

· Pre-print available https://www.biorxiv.org/content/10.1101/839704v2
· co-First Author.
· This project was developed under Dr. Carlos Mendez-Cruz.

🏅 AWARDS AND SCHOLARSHIPS

2020
|
2018

Beca Excelencia Academica Olimpiadas
Mexican Academy of Sciences

· This scholarship is awarded by the Mexican Academy of Sciences to bachelor students with high academic achievement and that were awarded a medal at one the National Science Olympiads

2016

Programa de Capacitacion en Metodos de Investigacion
Secretariat of Public Education and National Autonomous University of Mexico

· This scholarship finances international internships for students, of any level, with high academic achievement.

CONTACT

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 github.com/rolayoalarcon
 bitbucket.org/rolayo
📞 +49 175-3435921
 +52 01 55-43417968

PROGRAMMING SKILLS

Most experience with:
– Python
– R
– Bash

Basic experience with:
– Perl
– HTML
– PHP
– SQL

BIOINFORMATIC SKILLS

RNA-Seq
CHiP-Seq
Metagenomics
Phylogenomics
Sequence Scanning Last updated on 2019-12-06.

2016 — **National Biology Olympiad**
Third Place

- The National Biology Olympiad is organized by the Mexican Academy of Sciences.
- Students that were previously selected by their respective state competitions, take a written and practical exam in hopes of reaching first place, and the chance to represent Mexico in international competitions.

📈 RESEARCH EXPERIENCE

2020
|
2019 — **Dr. Robert Schneider**
Institute of Functional Epigenetics 📍 Helmholtz Zentrum Muenchen

- Describing mechanisms behind transcriptional memory.
- Used predictive models to relate enhancers to regulated genes.
- Describing possible roles of Histone 1 subtypes during cell differentiation.

2020
|
2018 — **Dr. Carlos Medez Cruz**
Center for Genomic Sciences UNAM 📍 UNAM

- Supervised learning approaches in Natural Language Processing
- Developed GeDEx; an automatic tool that captures consensus relationships between genes and diseases from a collection of abstracts.
- Benchmarked performance of Deep Learning models to predict antibiotic resistance from genomic sequences.

2019
|
2017 — **Dr. Julio Freyre**
Center for Genomic Sciences UNAM 📍 UNAM

- Participated in Systems Biology Workshop
- Implemented and reviewed tools that predict gene regulatory networks in bacteria (manuscript in preparation)

2019
|
2018 — **Dr. Alejandro Sanchez Flores**
Institute of Biotechnology 📍 UNAM

- Participated in metagenomics workshop
- Uncovered changes in the microbiome of pigs during the first months of life, as a result of consumption of different diets
- Uncovered differentially expressed genes in intestinal tissues as a result of consumption of different diets

2018 — **Dr. Robert Schneider**
Institute of Functional Epigenetics 📍 Helmholtz Zentrum Muenchen

- Uncovered genes that show transcriptional memory after repeated exposure to stress.
- Summer internship

2017 • **Dr. Santiago Castillo**

Center for Genomic Sciences ⚲ UNAM

- Detection of insertion sequences conferring antibiotic resistance in A. baumanii strains.
- Phylogenomics and comparative genomics.
- Fall semester internship

TEACHING EXPERIENCE

2019 • **Seminar in Statistics**

Center for Genomic Sciences ⚲ UNAM

- Teaching assistant and lectured basics in R
- This class is offered to undergraduates and postgraduates working at the Center for Genomic Sciences
- Organized by Dr. Ayari Fuentes and Dr. Diego Cortez

2019 • **Introduction to Machine Learning**

Center for Genomic Sciences ⚲ UNAM

- Teaching assistant and lectured one session
- Course offered to students interested in Machine Learning and Deep Learning at the Center for Genomic Sciences
- Course organized by Dr. Carlos Mendez Cruz

SPECIAL COURSES

2019 • **Antibiotic Resistance: Mechanisms and Perspectives**

Center for Genomic Sciences ⚲ UNAM

- Graduate course offered to students at the Center for Genomic Sciences.
- Organized by Dr. Miguel Cevallos Gaos

2018 • **Worskhop: Introduction to Deep Learning**

Universidad Autonoma del Estado de Morelos ⚲ UNAM

- Workshop offered to anybody interested in deep learning
- Lectured by Dr. Edgar F. Román Rangel

2018 • **Basics of Applied Machine Learning**

Center for Genomic Sciences ⚲ UNAM

- Optional undergraduate course.
- Organized by Dr. Carlos Mendez Cruz

I really like being involved in teaching and science communication. I believe that teachers have allowed me to reach my goals, and I would like to help others do the same.

⊞ PRESS (ABOUT)

2016 ● **Tres medallas para preparatorianos en la Olimpiada Nacional de Biologia**
Gaceta Universitaria de la ENP

· Brief piece about my experiences during the National Biology Olympiad
· Available at http://dgenp.unam.mx/gaceta/2016/14-2015-2016-348.pdf

🗈 REFERENCES

● **Dr. Robert Schneider**
Head of the Institute of Functional Epigenetics
📍 Helmholtz Zentrum Muenchen

· email: robert.schneider@helmholtz-muenchen.de
· I have worked with Dr. Schneider for 13 months, acting as a main data analyst in various projects.

● **Dr. Carlos Medez Cruz**
Researcher at the Center for Genomic Sciences 📍 UNAM

· email: cmendezc@ccg.unam.mx
· I developed a project that is currently under review with Dr. Mendez. I have also acted as an assistant in some of his courses