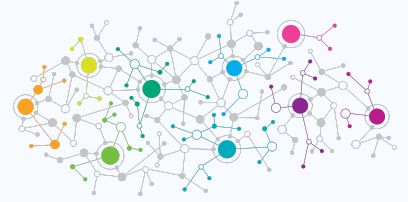# ROBERTO OLAYO ALARCON

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

- ✉ rolayoalarcon@gmail.com
- ⬡ 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. Also lectured on basics of 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. Lectured session on backpropagation
- 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