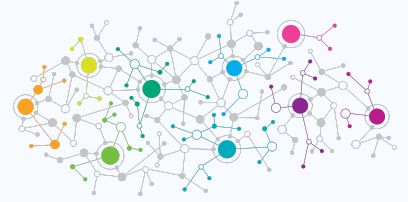


ROBERTO OLAYO ALARCON

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 University 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

 rolayolarcon@gmail.com
 github.com/rolayolarcon
 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 2019-12-09.

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.

LANGUAGES

Spanish: Native

English: Native

German: Beginner



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

I have mainly worked in the areas of Epigenomics, Machine Learning and Metagenomics; almost always involved in the computational aspects of the projects I participate in.

- 2017 ● **Dr. Santiago Castillo**
Center for Genomic Sciences  UNAM
- Detection of insertion sequences conferring antibiotic resistance in *A. baumannii* 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

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.



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 ● **Workshop: 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



PRESS (ABOUT)

2016



Tres medallas para preparatorianos en la Olimpiada Nacional de Biología

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 have worked with Dr. Mendez for two years. During this time, I developed a project that is currently under review. I have also acted as an assistant in some of his courses



Dr. Julio Freyre

Researcher at the Center for Genomic Sciences

📍 UNAM

- email: jfreyre@ccg.unam.mx
- I have worked with Dr. Freyre for almost 2 years. While not often under his direct supervision, I participated in his systems biology research group.