

Astrid Arena Olave Herrera

📄 <https://aaolaveh.github.io>
✉ aaolaveh@unal.edu.co
📍 Bogotá, COL

EDUCATION

M.Sc in Applied Mathematics 2021

Universidad Nacional de Colombia

Thesis: Revealing brain network dynamics during the emotional state of suspense using topological data analysis

Advisor: José Perea. Coadvisor: Francisco Gomez

B.Sc with Honors in Mathematics 2018

Universidad Nacional de Colombia

Thesis: Persistent homology analysis of RNA secondary structures

Advisor: Gustavo N. Rubiano

RESEARCH INTERESTS

- Topological data analysis: Foundations and applications
- Algebraic topology
- Computational biology

RESEARCH EXPERIENCE

Research group Computational Modeling of Biological Systems (Combios) August 2018-Present

Universidad Nacional de Colombia

Research leader: Francisco Gómez

Topological Data Analysis for functional neuroimaging.

Research group RNomica teórica y computacional June 2017-2018

Universidad Nacional de Colombia

Research leader: Clara Isabel Bermudez

Mathematic models in RNA structure

Fields Undergraduate Summer Research Program July-August 2017

The Fields Institute for Research in Mathematical Sciences

Research Supervisor: Professor Konstantinos Georgiou

Project: Lower Bounds for Semidefinite Programming

Relaxations to Combinatorial Optimization Problems

HONORS AND AWARDS

Scholarship for complete tuition for M.Sc programs 2019
Universidad Nacional de Colombia

Exemption from payment for best average 2013-2018
Universidad Nacional de Colombia

PRESENTATIONS AND PAPERS

2. Georgiou, K., Jiang, A. J., Lee, E., Olave, A. A., Seong, I., and Upadhyaya, T., *Lift & project systems performing on the partial-vertex-cover polytope*, Theoretical Computer Science **820** (2020), 1–16
1. Olave, A. A., *Persistent homology analysis of rna secondary structures*, Poster session presented at XXII Colombian Congress of Mathematics, 2019, Popayán, Colombia

WORK EXPERIENCE

Fresh eye reviewer July 2019
Instituto Colombiano para la Evaluación de la Educación - Icfes
 Revised questions for Saber 11 exam (Colombia's high school exit examination)

Teacher Assistant February-May 2018
Universidad Nacional de Colombia

EXTRACURRICULAR ACTIVITIES

Sin Medida inter-university catholic community 2018-Present
Leadership team member

Universidad Nacional women's soccer team 2014-Present
Goalkeeper