

CRISTIAN ALEJANDRO PULIDO QUINTERO

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CONTACT INFORMATION

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SUMMARY

Mathematician with a Master's degree in Applied Mathematics and PhD student in systems and computing engineering interested in mathematical modeling of various phenomena and topics. Recent work includes the study of emergency management models taking into account uncertainty arising from interventions and incomplete information. Previous work includes the study of fear of crime, proposing models to classify security-related texts on Twitter and predict their quantity.

RESEARCH INTERESTS

Predictive security: Study of crime in society, including the emergence and spread of fear of crime based on the factors that determine a population and forecasting crimes rates in scenarios with behavior changes by interventions.

General mathematical models: Modeling diverse phenomenals from mathematical points of views.

EDUCATION

PhD student. In Engineering - Systems and Computer Engineering. Enrolled since the second semester of 2023.

Universidad Nacional de Colombia, Bogotá D.C., Colombia.

Master of science: Applied Mathematics. April 2020.

Universidad Nacional de Colombia, Bogotá D.C., Colombia.

Bachelor in Mathematics. April 2017.

Universidad Distrital Francisco José de Caldas, Bogotá D.C., Colombia.

PUBLICATIONS

Pulido, C., Reyes, A. M., Rudas, J., Victorino, J., Martínez, D., Narváez, L. Á., & Gómez, F. (2020, November). An evolutionary algorithm for reducing fear of crime. In 2020 7th International Conference on Behavioural and Social Computing (BESC) (pp. 1-6). IEEE.

Pulido, C., Prieto, J., & Gómez, F. (2019). How the social interactions in communities affect the fear of crime. *Systems Research and Behavioral Science*, 36(6), 789-798.

Pulido, C., & Gómez, F. (2019, April). The role of communities in the fear of crime. In 2019 4th World Conference on Complex Systems (WCCS) (pp. 1-6). IEEE.

Victorino, J., Barrero, M., Rudas, J., Pulido, C., Chaparro, L., Estrada, C., ... & Gómez, F. (2022, February). Prediction based on time-series of aggressive behaviors. A case study Bogotá, Colombia. In 2022 International Symposium on Electrical, Electronics and Information Engineering (ISEEIE) (pp. 114-119). IEEE.

Victorino, J., Rudas, J., Reyes, A. M., Pulido, C., Chaparro, L. F., Estrada, C., ... & Gómez, F. (2021). Highly Sessional Aggressive Behaviors Link to Temporal Dynamics Shared Across Space. IEEE Access, 9, 165072-165084.

Enciso-Olivera, C. O., Ordóñez-Rubiano, E. G., Casanova-Libreros, R., Rivera, D., Zarate-Ardila, C. J., Rudas, J., ... & Marín-Muñoz, J. H. (2021). Structural and functional connectivity of the ascending arousal network for prediction of outcome in patients with acute disorders of consciousness. Scientific Reports, 11(1), 22952.

Chaparro, L. F., Pulido, C., Rudas, J., Victorino, J., Reyes, A. M., Estrada, C., ... & Gómez, F. (2021). Quantifying perception of security through social media and its relationship with crime. IEEE Access, 9, 139201-139213.

Pulido, C., Chaparro, L. F., Rudas, J., Victorino, J., Estrada, C., Narvaez, L. A., & Gómez, F. (2021). Prediction of Perception of Security Using Social Media Content. In Progress in Pattern Recognition, Image Analysis, Computer Vision, and Applications: 25th Iberoamerican Congress, CIARP 2021, Porto, Portugal, May 10–13, 2021, Revised Selected Papers 25 (pp. 88-96). Springer International Publishing.

RESEARCH EXPERIENCE

Fundación Universitaria de Ciencias de la Salud Since 01/03/2018 to 30/11/2019

Bogotá D.C., Colombia.

Auxiliary research magnetic resonance imaging in comatose patients. Medical image, prediction recovery of consciousness. Tasks can be summarized in web platform development to centralize clinical and medical image information, support experimentation with medical image processing tools such as fsl, spm12, dipy, nipy.

ViveLab Bogotá Since 01/06/2019 to 06/09/2019

Bogotá D.C., Colombia.

Researcher in an applied research project for the use and appropriation of emerging technologies in Bogotá. Tasks can be summarized in support of the implementation of project documentation, support in the preparation of a scientific report, conceptualization, and design of an instrument or predictive analytical tool.

Laboratorio de Analítica de Datos - DataLab-UNAL Since 01/12/2019

Bogotá D.C., Colombia.

Researcher fulfilling related functions with research and supporting the development of activities such as design, implementation, and calibration of predictive analytics models generated in the laboratory within the framework of research projects.

Projects:

- "DISEÑO Y VALIDACIÓN DE MODELOS DE ANALÍTICA PREDICTIVA DE FENÓMENOS DE SEGURIDAD Y CONVIVENCIA PARA LA TOMA DE DECISIONES EN BOGOTÁ" particularly modeling phenomena of perception of security.
- "FORMULAR E IMPLEMENTAR UN MODELO PARA LA CONSTRUCCIÓN DE CUADRANTES DINÁMICOS DE VIGILANCIA QUE SE ADAPTEN A LOS CAMBIOS EN LAS DINÁMICAS DE OCURRENCIA DE LOS MOTIVOS POLICIALES Y QUE OPTIMICEN LOS TIEMPOS DE RESPUESTA FRENTE A ESTOS EVENTOS"
- "Fortalecimiento de una plataforma diagnóstica orientada a reducir la resistencia antimicrobiana en porcinos"
- "MODELO MATEMÁTICO PARA SOPORTE A LA TOMA DE DECISIONES EN EL ORDENAMIENTO ALREDEDOR DEL AGUA EN LA REGIÓN DE LA MOJANA."
- "Diseño y desarrollo de la estrategia de visualización por medio de un Geoportal/Geovisor (...) diseñado para el seguimiento y verificación del Capítulo Étnico y la verificación de la Instancia Especial de Alto Nivel con Pueblos Étnicos, cumpliendo con las especificaciones técnicas y funcionales detalladas en el documento"

ACADEMIC EXPERIENCE

UNIVERSIDAD ANTONIO NARIÑO

Since 01/02/2022

Bogotá D.C., Colombia.

Professor faculty of computer and systems engineering. Hourly from 2022 to 2024 first half year. Half time since 2024 second half year.

Responsibilities:

- Teaching undergraduate courses in computer science and engineering.
- Designing and updating course materials, including lectures, assignments, and exams.
- Guiding students in problem-solving and algorithm development.
- Evaluating student performance and providing academic support.
- Participating in faculty meetings and academic planning.

Courses taught:

- **Lógica Computacional (Presencial)** → Continuously taught from 2022-1 to Present
- **Introducción a la Ingeniería** → 2022-1, 2024-1
- **Programación de Computadores (Presencial)** → 2024-2
- **Bases de Datos** → 2025-1
- **Programación Orientada a Objetos** → 2025-1

GIMNASIO ACADEMICO REGIONAL

Since 29/07/2016 to 05/08/2016

Bogotá D.C., Colombia.

Eighth-grade math teacher.

COMPUTATIONAL SKILLS

Languages: LaTeX, HTML, JavaScript.
Programming languages: Python (2.X. and 3.X.), C++
Frameworks: Django, scikit-learn
Libraries: NumPy, SciPy, Pandas, Seaborn
Operative Systems: GNU/Linux (Debian based distributions), Windows.
Software: Databases MySQL, MATLAB.

LANGUAGES

Spanish: (Native).

English:

Reading	good
Speaking	medium
Writing	medium