

Miguel José Vivas Cortez  
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## Intereses de la investigación

Miguel Vivas-Cortez, Nació en Acarigua, Estado Portuguesa (Venezuela), es graduado como Matemático de la Universidad Centroccidental Lisandro Alvarado (UCLA), donde obtiene también su título de maestría en matemáticas, mención matemática pura, su tesis, en la cual estudia un sistema competitivo del Tipo Lotka-Volterra con retardo infinito, fue publicada en la prestigiosa revista (Q1 Scopus) *Nonlinear Analysis: Real World Applications* (Reino Unido) (ver <https://doi.org/10.1016/j.nonrwa.2005.09.005>).

Recibió su título de Doctor en Ciencias, Mención Matemática, de la Universidad Central de Venezuela (UCV), su tesis, en la cual extiende la noción de variación acotada a funciones definidas sobre subconjuntos compactos del plano complejo ( <https://doi.org/10.14708/cm.v54i1.757>), generó 4 publicaciones en prestigiosas revistas internacionales. Cuenta con más de 180 publicaciones científicas, más de mil quinientas citas, ha dirigido varios trabajos de grado, tesis de maestría y doctorado, en líneas de investigación como: Ecuaciones Diferenciales (Modelos Ecológicos), Derivadas Fraccionarias (Conformes y No Conformes), Análisis no lineal (Convexidad Generalizada) y Análisis Funcional (Funciones de Variación Acotada Generalizada), es autor de varios libros textos entre los que se destacan: Álgebra lineal. Un enfoque práctico, Cálculo Diferencial para ciencias e ingeniería, Matemáticas Previas al Cálculo y Análisis en una Variable Compleja, entre otros. Rankeado a nivel mundial según SciVal Scopus entre los 100 matemáticos más productivos (período 2018-2023) en el área de análisis por su volumen de publicaciones en Scopus. Rankeado según SciVal Scopus por su productividad científica en el área de Matemáticas como número 1 en Ecuador y número 6 en Latinoamérica (2019-2025). El Dr. Vivas tiene más de 25 años de experiencia como profesor en matemáticas en educación universitaria a nivel de pregrado, maestría y doctorado, ingresó por concurso de oposición en análisis complejo a la Universidad Centroccidental "Lisandro Alvarado" (UCLA) en 1997, donde laboró hasta octubre de 2017, ha sido profesor visitante en la Universidad Nacional Arturo Prat (Chile), profesor titular de la UCLA, fue profesor invitado y profesor ocasional en Escuela Superior Politécnica del Litoral (ESPOL), Guayaquil, Ecuador desde Octubre 2016 a Septiembre 2017. También desarrolla actividad de divulgación en temas científicos relacionados con las matemáticas a través de conferencias divulgativas y científicas en diversas instituciones en eventos nacionales e internacionales, ha sido varias veces invitado como conferencista inaugural del Encuentro Internacional de Matemáticas (EIMAT), en la Universidad del Atlántico.

Ha sido revisor de diversos proyectos de investigación a nivel nacional e internacional, árbitro de importantes revistas indexadas en Scopus, también ha sido editor invitado en el *Journal Mathematics*, y miembro del comité editorial de varias revistas nacionales e internacionales.

El Dr. Vivas-Cortez es ganador en Venezuela del premio estímulo a la investigación (PEI) y premio promoción a la investigación (PPI). Desde el 17 de septiembre de 2017 es profesor principal 3 ( e Investigador de alta productividad científica), en la escuela de ciencias físicas y matemáticas de la facultad de ciencias exactas y naturales en la Pontificia Universidad Católica de Ecuador (PUCE), Sede Quito, donde ingresó por como ganador del concurso de oposición con una calificación de 97/100.

Sus principales intereses de investigación son las ecuaciones diferenciales ordinarias y fraccionales, el análisis funcional (Funciones de Variación Acotada) y el análisis no-lineal (Convexidad Generalizada).

## Empleo

### Facultad de Ciencias Exactas y Naturales

Pontificia Universidad Católica del Ecuador

9 ago. 2009 → present

### PUCE Quito

Pontificia Universidad Católica del Ecuador

8 ago. 2009 → present

## Resultado de la investigación

### $\phi(x)$ -Tribonacci polynomial, numbers, and its sum

Pandurangan, R., Kannan, S., Thabet, S. T. M., Vivas-Cortez, M. & Kedim, I., 2025, En: *Journal of Mathematics and Computer Science*. 37, 1, p. 32-44 13 p.

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**Investigation of Analytical Soliton Solutions to the Non-Linear Klein–Gordon Model Using Efficient Techniques**  
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**A study of neutrosophic controlled pentagonal metric space with applications**  
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**Generalized Fuzzy-Valued Convexity with Ostrowski's, and Hermite-Hadamard Type Inequalities over Inclusion Relations and Their Applications**  
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**New results about fuzzy  $\gamma$ -convex functions connected with the q-analogue multiplier-Noor integral operator**

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**A STUDY of FRACTIONAL HERMITE-HADAMARD-MERCER INEQUALITIES for DIFFERENTIABLE FUNCTIONS**

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#### **Some Results Related with $n$ —variables Non Conformable Fractional Derivatives**

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#### **On Caputo-Hadamard fractional pantograph problem of two different orders with Dirichlet boundary conditions**

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#### **A novel investigation of dynamical behavior to describe nonlinear wave motion in (3+1)-dimensions**

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#### **On Fractional Ostrowski-Mercer-Type Inequalities and Applications**

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#### **Some Fractional Integral Inequalities by Way of Raina Fractional Integrals**

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#### **A Novel Quintic B-Spline Technique for Numerical Solutions of the Fourth-Order Singular Singularly-Perturbed Problems**

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#### **INNOVATIVE INTERPOLATING POLYNOMIAL APPROACH TO FRACTIONAL INTEGRAL INEQUALITIES AND REAL-WORLD IMPLEMENTATIONS**

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#### **Certain Results on Fuzzy $p$ -Valent Functions Involving the Linear Operator**

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#### **On the Generalization of Ostrowski-Type Integral Inequalities via Fractional Integral Operators with Application to Error Bounds**

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#### **A Family of Holomorphic and $m$ -Fold Symmetric Bi-Univalent Functions Endowed with Coefficient Estimate Problems**

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**On local fractional integral inequalities via generalized ( $h_1, h_2$ )-preinvexity involving local fractional integral operators with Mittag-Leffler kernel**

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## **Praxis gerencial en la investigación universitaria lareense**

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## **Matemáticas Previas al Cálculo, una iniciación a la vida universitaria.**

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## **Efectos de un curso de matemáticas previas al cálculo en el rendimiento académico en la asignatura matemática I en una ingeniería del decanato de ciencias de la UCLA**

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Extinction in a two dimensional Lotka-Volterra system with infinite delay

Montes de Oca, F. & Vivas, M., dic. 2006, En: *Nonlinear Analysis: Real World Applications.* 7, 5, p. 1042-1047 6 p.

## **Prensa/medios de comunicación**

### **Findings from Pontifical Catholic University Yields New Findings on Mathematics (On a New Structure of Multi-term Hilfer Fractional Impulsive Neutral Levin-nohel Integrodifferential System With Variable Time Delay)**

Vivas Cortez, M. J.

9/04/24

1 elemento de Cobertura del medio de comunicación

### **New Computer Science Study Results Reported from Pontifical Catholic University of Ecuador (Application of an Extended Cubic B-Spline to Find the Numerical Solution of the Generalized Nonlinear Time-Fractional Klein-Gordon Equation in ...)**

Vivas-Cortez, M.

15/05/24

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### **New Findings in Mathematics Described from Pontifical Catholic University of Ecuador (Lump, Breather, Ma-Breather, Kuznetsov-Ma-Breather, Periodic Cross-Kink and Multi-Waves Soliton Solutions for Benney-Luke Equation)**

Vivas-Cortez, M.

9/07/24

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### **New Findings on Mathematics from Pontifical Catholic University Summarized (On Opial-type Inequality for a Generalized Fractional Integral Operator)**

Vivas Cortez, M. J.

8/11/22

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### **ON THE OSCILLATORY BEHAVIOUR OF SOME FORCED NONLINEAR GENERALIZED DIFFERENTIAL EQUATION.**

Vivas Cortez, M. J.

1/05/21

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### **ON THE OSCILLATORY BEHAVIOUR OF SOME FORCED NONLINEAR GENERALIZED DIFFERENTIAL EQUATION.**

Vivas Cortez, M. J.

1/04/21

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### **Pontificia Universidad Catolica del Ecuador Researchers Detail Research in Mathematics (Raina's Function-Based Formulations of Right-Sided Simpson's and Newton's Inequalities for Generalized Coordinated Convex Functions)**

Vivas Cortez, M. J.

15/08/23

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**Pontificia Universidad Catolica del Ecuador Researchers Provide New Insights into Inequalities and Applications (A modified class of Ostrowski-type inequalities and error bounds of Hermite-Hadamard inequalities)**

Vivas Cortez, M. J.

27/10/23

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**Researchers at Anhui Xinhua University Target Science and Technology (Bifurcation study, phase portraits and optical solitons of dual-mode resonant nonlinear Schrodinger dynamical equation with Kerr law non-linearity)**

Vivas-Cortez, M.

14/08/24

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**Researchers at Hashemite University Have Reported New Data on Mathematics [On Local Fractional Integral Inequalities Via Generalized ((Sic)1, (Sic) 2) -preinvexity Involving Local Fractional Integral Operators With Mittag-leffler Kernel]**

Vivas Cortez, M. J.

4/07/23

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**Research from Pontifical Catholic University of Ecuador in the Area of Mathematics Published (Abundant Soliton Solutions to the Generalized Reaction Duffing Model and Their Applications)**

Vivas-Cortez, M.

19/07/24

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**Studies from Pontifical Catholic University Update Current Data on Mathematics (New Results About Fuzzy G-convex Functions Connected With the Q-analogue Multiplier-noor Integral Operator)**

Vivas Cortez, M. J.

1/03/24

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**Study Findings from Faculty of Exact and Natural Sciences Advance Knowledge in Engineering (Bullen-Mercer type inequalities with applications in numerical analysis)**

Vivas-Cortez, M.

6/06/24

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**Study Findings on Axioms Are Outlined in Reports from Pontificia Universidad Catolica del Ecuador (Generalized Fuzzy-Valued Convexity with Ostrowski's, and Hermite-Hadamard Type Inequalities over Inclusion Relations and Their Applications)**

Vivas-Cortez, M.

12/08/24

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**Study Findings on Information and Data Theories Reported by Researchers at University of Okara (Fractional Hermite-Hadamard-Mercer-Type Inequalities for Interval-Valued Convex Stochastic Processes with Center-Radius Order and Their Related ...)**

Vivas-Cortez, M.

13/08/24

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**University of Sargodha Researchers Highlight Research in Engineering (Fractional integral inequalities and error estimates of generalized mean differences)**

Vivas-Cortez, M.

7/05/24

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**University of Sargodha Researchers Provide New Insights into Engineering (Visualizing fractional inequalities through 2D and 3D graphs with applications)**

Vivas-Cortez, M.

6/05/24

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## **Tesis académicas**

**FUNCIONES DE VARIACIÓN ACOTADA GENERALIZADA SOBRE SUBCONJUNTOS DEL PLANO COMPLEJO**

Vivas Cortez, M. J. (Autor), Giménez, J. (Supervisor), 9 oct. 2014

**Extinción en Sistemas del tipo Lotka-Volterra con Retardo**

Vivas-Cortez, M. (Autor), Montes de Oca, F. (Supervisor), 2007