

Eduardo Quiñonez Rico

Objective

Apply for a research and teaching position at undergraduate, master and PhD level.

Education

New Mexico State University(1992-1997) *Las Cruces, NM*

Ph. D. in Mathematics (CPA 3/4/4)

- Algebraic Topology: Algebraic K-Theory.
- Cyclic Homology, Dihedral and Quaterionic Homologues.

New Mexico State University(1989-1991) *Las Cruces, NM*

M. S. in Mathematics (CPA 3/4/4)

- Algebraic Topology.

Universidad Autónoma de México *México D.F.*

M. S. in Mathematics (GPA 9.30/10)

- Field: Algebraic Topology.

Universidad Autónoma de México *México D.F.*

B. S. in Mathematics (CPA 9.83/10)

- Field: Topología Algebraica.

Universidad Autónoma de México *México D.F.*

BS in Music.

- Field: Piano and Composition.

Professional Experience

2008-2014 CNC Designer. Design of CNC Machines: Routers and Plasma CNC Machine

Project was initiated with the construction of a CNC router, including design in a CAD software, mechanical construction, integration of electrical components, and programming. Several machines of 3 and 4 axes have been designed for routers and plasma.

2006 Volkswagen de México *Puebla, México*

- Accelerated Life Testing

1997–2001 Depto. Ingeniería Industrial *Cd. Juárez Chih.*

Instituto Tecnológico de Cd. Juárez

- Industrial Engineering Department Head.
- Thompson Televisions of México. Consultant: (August 2000-December 2000). Scheduling Multi-Item and Multi-Machine Assignment

- DELPHI. Accelerated Life Testing in a Electronic Component (Mayo-Septiembre 2002).

Thesis

Ingeniería Industrial

Cd. Juárez Chih.

Instituto Tecnológico de Cd. Juárez

- Industrial Engineering Master Thesis: Student: Oscar Torres. Accelerated Life Testing. Methodology. Starting date: January 2006. Pratical work at VolksWagen of Mexico. (In Progress). ITESM Industrial Engineering Department.
- Industrial Engineering Master Thesis. Student: Marta Eraña. Starting date: January 2005. (In Progress). ITESM Industrial Engineering Department.
- Industrial Engineering Ph.D Thesis (1998-2001): Student: Manuel A. Rodríguez. Title: Nested Designs in Three Directions. Graduation Date: November 2002. ITCJ Industrial Engineering Department.
- M.S. Thesis Industrial Engineering (2000-2001): Student; Edgar García. Surface Response Methodology to find Optimal Conditions in a Sealing Plastic Machinery. Practical application in VENUSA. Graduation Date: December 2001.
- M.S. Thesis Industrial Engineering (2000-2001): Mayra R. García. Optimización de una Máquina de Inyección de Plastico. Area: Ingeniería Industrial. (In progress).
- B. S. Thesis in Mathematics. Student Juan de Dios Viramontes. Incomplete Block Designs and Hadamard Matrices. Graduation date: May 2001.
- M.S. Thesis Industrial Engineering. Student: Diana Mora. Accelerated Life Testing in an Electronic Component. Practical Application in DELPHI. Graduation date: November 2002. ITCJ Industrial Engineering Department.
- Industrial Engineering Master Thesis. (January 2002): Nohemi Simón. Accelerated Life Testing ina Diesel injection device. Practical Application at DIESEL RECON). (In progress).

Academic Activities

- Visiting Scholar at New Mexico State University. Department of Industrial Engineering. Summer 2006.
- Talk: Prespectivas de un Matemático en México. Universidad Autónoma Metropolitana, Unidad Iztapalapa. México, DF. (Noviembre 2005)
- Talk: Industrial Engineering Congress. ITESM Campus Veracruz (March 2005).
- Talk: Incomplete Block Designs: A Constructions in *Mathematica*. Segundo Congreso Internacional de Sistemas e Informática. Piedras Negras Marzo 2002.
- Talk: Conference Speaker. An Assignment Problem with Setup Costs. Symposium de Ingeniería Industrial: Cd. Juárez Chih. Octubre del 2000.
- Talk: Dihedral and Quaternionic Homology of an Involutive Tensor Algebra. Joint Meeting of the Mexican Mathematical Society and the American Mathematical Society. May 1999. Morelia Michoacán, Mexico.
- Talk: Constructing Block Incomplete Designs in *Mathematica*. International Congress in Systems. Piedras Negras Coahuila, Mexico. March 2001.
- Differential Geometry Course with *Mathematica*. Universidad Autónoma de Cd. Juárez (1997).
- Experimental Design Seminar. (1997-1998).
- No Linear Optimization Seminar. (1997-1998).

Teaching Experience

- **University of Texas at El Paso.** Mathematics Lecturer. Calculus I, II, II, Matrix Algebra, Differential Equation
- **Instituto Tecnológico de Estudios Superiores de Monterrey.** Design and Analysis

of Experiments, Mathematical Programming, Linear Regression, Logistics: Mathematical Modeling, and Algorithms, Operations Research. (January 2003- June 2007)

- **Tecnológico de Cd. Juárez.** Operations Research, Statistics, Fuzzy Logic, Design and Analysis of Experiments, Mathematical Programming.
- **Universidad Autónoma de Cd. Juárez.** Advanced Mathematics. Numerical Analysis. Vector Analysis. Linear Algebra, Complex Variables, Mathematical Analysis I and II, Modern Algebra I and II, Mathematical Logic. Differential Equations I.
- **New Mexico State University.** College Algebra, Calculus I y II.
- **Universidad Autónoma de México.** Teaching Assistant: Calculus III, Modern Algebra I, Complex Variables.
- **Diferencial Geometry Course.** Universidad Autónoma de Cd. Juárez. (November 1998).

Articles

- "Cross Entropy-based Metaheuristic Algorithm for Large Scale Capacitated Facility Location Problems," M. Caserta and E. Quiñonez-Rico, Proceedings of MIC -- VII Metaheuristic International Conference, Montreal, Canada, June 25-29, 2007.
- A Distribution and Multi-Item Capacitated Lot-Sizing problem with Setup Times with Multiple Periods. Marco Caserta and Eduardo Quiñonez-Rico. (Revision Computers and Operations Research).
- A Hybrid Cross Entropy based Algorithm for a Distribution with Inventories Problem an Setup Problem. Eduardo Quiñonez-Rico, Héctor Zárate, and Marco Caseta. (In preparation):
- A Turnpike formula and a Dynamic Algorithm for the a Integer Covering Knapsack Problem. Eduardo Quiñonez Rico. (In preparation).
- A Cross Entropy Hybrid Algorithm for the Multi-Item Capacitated Lot Sizing Problem with Setups. (In revision EJOR).
- A Cross Entropy Algorithm for the Knapsack Problem with Setups. Accepted for publication Computers and Operations Research. (January 2006).
- A Quaternionic Resolution by a Wall Construction. Contemporary Mathematics. (In progress).
- Dihedral Homology of an Involutive Tensor Algebra. Sent to Proceedings of the London Mathematical Society.

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Software

- **Mathematica:** A System for Doing Mathematics by Computer.
- **CPLEX:** Optimization Software.
- **MINITAB:** Statistics Package.
- **COIN:** Optimization Software for Linux.
- **WINQSB:** Optimization Package.
- **INDUSTRIAL OPTIMIZATION:** An Optimization Package for Operations Research in *Matemática*.
- **VISUAL BASIC.**
- **ALTA Reliasoft:** Computer package for Accelerated Life Testing.