



National Biomechanics Institute

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606 S. Olive St Suite 1015
Los Angeles, CA 90014

1-855-277-3250
erubio@nationalbi.com
www.nationalbi.com



Eloy Rubio, MS, ME
Associate Engineer

Mr. Eloy Rubio is an Associate Engineer at the National Biomechanics Institute. Mr. Rubio holds two Master degrees: a Master of Engineering (ME) in Mechanical and Aerospace Engineering from the Illinois Institute of Technology, as well as a Master and Bachelor of Science (MS and BS) in Industrial Engineering with an emphasis in Mechanical Engineering from Universidad Politécnica de Madrid, Spain.

Mr. Rubio's primary research focuses on accident reconstruction, automotive software development and crash simulation. His previous research includes high-performance motorcycle helmet safety studies using Finite Element Analysis (CAE). He has also been involved in powertrain and engine electronic control development, vehicle performance evaluation and Computer-Aided Design (CAD) related to the automotive industry.

Mr. Rubio has experience as a Mechanical Engineer for the French telecommunications industry conducting structural analysis, computational testing, and certification of more than 100 telecom systems throughout France including designing of critical components under material regulations. He is also involved in human development and pro-bono engineering projects in Africa. His expertise includes PC-Crash, accident reconstruction, vehicle inspection, and biomechanics injury evaluation. Mr. Rubio has demonstrated Computer-Aided Engineering aptitude in thermal and structural analysis using Finite Elements Methods to evaluate safety and reliability in Hypermesh, Abaqus and ANSYS.

Prior to joining NBI, Mr. Rubio served as a researcher for the Armour College of Engineering in Chicago investigating a new concept of six-stroke adaptive internal combustion engine technology for the Society of Automotive Engineers (SAE).

Academic Credentials

ME, Mechanical and Aerospace Engineering, Illinois Institute of Technology, 2018

MS, Industrial (Mechanical) Engineering, Universidad Politécnica de Madrid, Spain, 2018

BS, Industrial (Mechanical) Engineering, Universidad Politécnica de Madrid, Spain, 2016

Current Appointments

Associate Engineer, National Biomechanics Institute

Past Appointments

Research Assistant, Armour College of Engineering, IIT Chicago, 2018

Mechanical Design Engineer, EPSETEL, France, 2016-2017

Project Engineering Intern, ONGAWA (NGO), Spain, 2016

Licenses and Certifications

Insights on Automotive Design, Veejay Gahir, 2018

CATIA V5: Surfacing, 2018

Projects & Achievements

Masters Thesis: Six-Stroke Based Adaptive Internal Combustion Engine Research. Society of Automotive Engineers (SAE) project: Successfully developed a MATLAB ECU electronic control of the engine adaptive performance cycles and variable operation modes, calibrating and evaluating the remarkable efficiency results of the adaptive engine applied to real driving cycles reducing fuel consumption by up to 45%.

High-Performance Motorcycle Helmet Research: Helmet model fiberglass and polycarbonate design, mesh convergence study and crash Finite Element Analysis under static and dynamic conditions for safety analysis. Design, material and helmet design improvement research.

Advance Automotive Powertrains: Battery, motor and engine modeling to simulate the behavior of each vehicle under driving conditions and develop performance models from driving cycle data to compare conventional, hybrid and electric vehicles in terms of energy efficiency.

Bachelor's Thesis: Tanzania Hydraulic Installation. Effectively evaluated and completely redesigned a hydraulic system for more than 6,000 people in Same, Tanzania. Pro-Bono cooperation with an engineering human development program focused on power and water solutions.

Languages

English

Spanish

French