

Néstor Alejandro Castaneda López

3105 Hamilton Street, Apt. 19, Philadelphia, Pennsylvania, 19104

T: 267-994-5369 E: nest.castaneda@gmail.com W: www.linkedin.com/in/nestorcastaneda, tamg.mem.drexel.edu

Education

Bachelor of Science & Masters of Science in Mechanical Engineering

Drexel University – Philadelphia, Pennsylvania, USA
Dean's Scholarship, Drexel University

Graduated: June 2015

Cumulative GPA: 3.31
June 2010 – June 2015

Research Experience

Theoretical and Applied Mechanics Group (TAMG) – Drexel University

September 2014 – Present

United Technologies Research Center Funded Project – 3D Woven Composites Project Team Leader (Advisor: Dr. A. Kontsos)

- Headed the mechanical, geometrical and damage characterization of 2D and 3D woven carbon fiber composites
- Quantified new damage precursor to predict 25% remaining life using ASTM standardized NDT&E techniques (DIC and AE)
- Developed and modified experimental set-up and post-processing procedures to strengthen analysis ability of TAMG

Work Experience

Airbus – Bremen, Germany

15 June 2014 – 15 July 2014

Research Engineer Co-op

- Manufactured Tied Foam Core (TFC) carbon fiber composites by Vacuum Assisted Resin Transfer Molding (VARTM)
- Diagnosed the degree of cure of composite specimens through photomicrography and Differential Scanning Calorimetry

Hochschule Bremen, University of Applied Sciences – Bremen, Germany

21 April 2014 – 10 September 2014

Research Engineer Co-op – Paraglider Project

- Optimized weight of a one-stage drive propulsion system using CAD modelling and dynamic Finite Element Analysis
- Prototyped \$50,000 battery management system employing wet-layup fiberglass, circuit design, and 3D printing

Rex Medical – Conshohocken, Pennsylvania, USA

20 September 2012 – 25 March 2013

Research and Development Engineer Co-op

- Developed prototypes of medical device components, both physical and virtual CAD models to overcome design obstacles
- Conducted and documented mechanical performance of parts using an Instron single column testing system
- Executed quality control through First Article Inspections (FAI) and implementation of 5S organization methodology

Allen-Sherman-Hoff – Exton, Pennsylvania, USA

28 September 2011 – 20 March 2012

Mechanical Engineering Co-op

- Facilitated project submittals by creating and revising AutoCAD drawings such as P&IDs, pipe supports and components
- Integrated Excel spreadsheets to analyze data such as calculation tables, databases and I/O electrical tables

Skills

Software: *Data Analysis:* MATLAB, Origin, MS Office, GOM ARAMIS, Mistras Noesis, FLIR. *CAD/CAE:* Autodesk Inventor (CAD, FEA & Dynamic Simulation), PTC Creo Parametric, AutoCAD, Google Sketch Up. *Finite Element Analysis:* ABAQUS, ANSYS. *Image Processing:* Fiji (ImageJ). *Graphic Design:* Adobe (Photoshop, Illustrator). *Data Acquisition:* Arduino, LabVIEW. *Operating Systems:* Windows, Mac.

Hardware: *Mechanical Testing:* MTS, Instron. *Non-Destructive Testing:* Digital Image Correlation (DIC), Infrared Thermography (IRT), Acoustic Emission (AE). *Material Inspection:* Micro-Computed Tomography, Scanning Electron Microscopy, Micro-VU Vertex Measuring System, Clean room. *Manufacturing/Prototyping:* Machine Shop experience, 3D Prototyping, CNC, Vacuum Assisted Resin Transfer Molding (VARTM), wet-layup

Languages: Spanish (Native), French (Fluent), German (A1)

Professional Organizations

American Society of Mechanical Engineers (ASME), American Society for Composites (ASC)

Community Service & Activities

Engineers without Borders (Former Member), SeaPerch Challenge (Former Mentor), Spanish Tutor Volunteer