Ricardo Osmar Jacome

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EDUCATION

University of Nebraska – Lincoln Estimated Graduation Date: May 2021

- Doctor of Philosophy Ph.D. in Mechanical Engineering and Applied Mechanics (3.90 GPA)
  - Specialization in Dynamics & Vibrations
  - Secondary Area of Study: Systems, Design and Controls
- Dissertation: "On-Road Coordinate Decomposition for Autonomous Vehicle Guidance"
- Overview: A methodology for improvement of current autonomous navigation technology in conjunction with wireless communication schemes in accordance with SAE J3016. The proposed methodology follows with a mathematical construction of a road geospatial reference for autonomous vehicle navigation on Euclidean spaces in respect to current AASHTO road designs.

University of Texas – Rio Grande Valley May 2017

- Bachelor of Science in Mechanical Engineering (3.98 GPA)
  - Minor in Business Administration (4.00 GPA)

WORK EXPERIENCE

Graduate Research Assistant *University of Nebraska – Lincoln* 2017-Present

- Data Analyst for Midwest Roadside Safety Facility involved in Finite Element Analysis simulations for crash testing analysis.
- Experience with instrumentation on high speed data acquisition systems, filtering techniques, and sensor data analysis during car crash worthiness evaluations.
- Familiarity with current standards and procedures for car crashes, and friction bed tests in accordance to SAE J211-1, J299, and J874.
- Autonomous vehicle research in trajectory generation, geometric road representation, and vehicle dynamics.

Teaching Assistant *University of Nebraska – Lincoln* 2020-Present

- Grader for undergraduate dynamics engineering class of ~80. Explained concepts to students and graded homework assignments.

Teaching Assistant *University of Texas – Rio Grande Valley* 2015-2017

- Mentor in an engineering class of ~120 undergraduate students. Explained concepts to students and graded lab reports. Class topics covered were Linear Algebra, Probability, Statistics and Vector Calculus.

Science Tutor *University of Texas – Rio Grande Valley* 2014-2017

- CRLA Level 2 Certified. Tutored students in the areas of Chemistry, Physics, Math and Engineering. Certified to train entering level tutors into the customer service environment.

UTCRS Internship *Mid-America Transportation Center* Summer 2015

- Position focused development of dynamic simulations on Adams MSC software for slopes at railway intersections. Created cost-benefit analysis into the deletion of these slopes for the railway industries.

ASSOCIATIONS

- Tau Beta Pi, Member (2016-Present)
- Brazilian Jiu-Jitsu Club (2014-2017)
- Hispanic Scholarship Fund Scholar (2018-Present)
- Society of Automotive Engineers (2018-Present)
- Society for Industrial and Applied Mathematics (2019 - Present

SOFTWARE PROFIENCY

- ***Microsoft Software***: Word, PowerPoint, Excel
- ***Design/Simulation Software***: Adams MSC, CarSim, Simulink
- ***Finite Element Analysis Software***: Autodesk Simulation & LS-Dyna
  - FEA on Tire Debeading Simulation: https://rickjacome.github.io/CurriculumVitae/files/2017-12-14-Jacome-Final-Report.pdf
- ***Programming/Processing Software:*** MATLAB, LabView, Arduino, Python
  - FFT Analysis on Steering Wheel Vibration: https://rickjacome.github.io/CurriculumVitae/files/2019-5-17-Vibrations-Jacome.pdf
  - Inverted PID Pendulum Controller: https://rickjacome.github.io/CurriculumVitae/files/2018-12-5-Pendulum-Jacome.pdf
  - Wavelet Analysis on Accelerations: https://rickjacome.github.io/CurriculumVitae/files/2019-12-11-Wavelets-Jacome.pdf

SKILLS

- Fluent in English and Spanish
- Intermediate French
- Guitar Player
- Beginner Japanese

AWARDS

- Society of Automotive Engineers Doctoral Engineering Scholarship 2020-2021
- Dwight David Eisenhower Transportation Fellowship 2018-2021
- Mid America Transportation Center Student of the Year Award 2018
- Society of Automotive Engineers/Heinz C. Prechter Automotive Excellence Scholarship 2017-2018
- Nebraska Engineering Recruitment Fellowship 2017-2019
- Summa Cum Laude Honors 2017

PRESENTATIONS/PUBLICATIONS

- Jacome R. "*Road Curvature Decomposition for Autonomous Guidance",* Presentation, WCX SAE World Congress Experience, Detroit, MI, April 2020
- Jacome R. "*Road Curvature Decomposition for Autonomous Guidance",* Poster Presentation, Dwight Eisenhower Panel at Transportation Research Board, Washington, DC, January 2020
- Jacome, R., Stolle, C. and Sweigard, M., "*Road Curvature Decomposition for Autonomous Guidance*," SAE Technical Paper 2020-01-1024, 2020, doi:10.4271/2020-01-1024.
- Jacome R. Stolle, C., & Sweigard M., *"Smart Barrier Scheme for Autonomous Guidance - MATC Year Two Report",* Internal Report, October 2019.
- Jacome R. Stolle, C., & Sweigard M., *"Virtual Barriers for Mitigating and Preventing Run-off Crashes, Phase I",* Mid-America Transportation Center, Internal Report, August 2018.
- Jacome R., Garcia R., Stutz J., & Moya J. *"Second Generation Multi-Station Polymer Creep-Tester",* Presentation, The University of Texas Rio Grande Valley, Senior Design Project, Edinburg, TX, May 2017.
- Jacome R., Trevino T. *"Multibody Simulation for Intersecting Slopes at Railway Roads using ADAMS MSC Software"*, Presentation, The University of Texas Rio Grande Valley, UTCRS Symposium, Edinburg, TX, October 2015.