

NATHALY VILLACIS

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EDUCATION	University of Michigan <i>Master of Science in Engineering in Mechanical Engineering</i> Coursework: Cell & Tissue Mechanics, Intro to Nanofabrication & Nanotechnology, Biomedical Imaging, Instrumentation & Experimental Techniques (GPA 4.0)	Ann Arbor, MI April 2020
	Universidad de las Fuerzas Armadas – ESPE <i>Mechanical Engineer (Bachelor of Science equivalent)</i> Coursework: Design of Machine Elements, CAD/CAM Systems, Quality Control (GPA 3.5)	Quito, Ecuador November 2014
PROFESSIONAL EXPERIENCE	Universidad de las Fuerzas Armadas – ESPE <i>Rheology Laboratory Analyst</i> <ul style="list-style-type: none">Operated a rheometer, high-speed camera and electrospinner to analyze behavior of viscoelastic fluids, high-speed motion phenomena (rifle shot), and mechanical properties of membranesManaged the laboratory's administrative tasks, including its physical organization and legalization, equipment schedule and maintenance plan, and website design and creation	Quito, Ecuador April 2017 – July 2018
	NEUMAC S.A. <i>Thesis Project Developer</i> <ul style="list-style-type: none">Calculated, designed, and simulated more than 15 mechanical elements of bottle perforatorPlanned manufacture of parts in a monthly basis, managing material and services suppliersSupervised team of 4 during the machine's manufacture and assembly processesRecycled unused equipment and materials while reducing machine fabrication costs in 60%	Quito, Ecuador September 2013 – November 2014
RESEARCH EXPERIENCE	University of Michigan – Lauro Ojeda Laboratory <i>Graduate Research Assistant</i> <ul style="list-style-type: none">Studied IMU signals to find gait cycle patterns that can predict abnormal medical conditionsSimulated human body movement from IMU data in OpenSim, MATLAB and Mokka, and compared it with MOCAP systems to determine their differences	Ann Arbor, MI May 2019 – August 2019
	Universidad de las Fuerzas Armadas – ESPE <i>Doctoral Thesis Assistant</i> <ul style="list-style-type: none">Analyzed rheological behavior of dispersions with bentonite, silicon dioxide and ethylene glycol in different concentrations to evaluate effect of nanoparticles in Newtonian fluidsPresented findings of research during conference in Switzerland and wrote article about repeatability and reproducibility in rheological properties of dispersions.Investigated about activation energy and microscopic properties in macroscopic performance of suspensions with nanoparticles	Quito, Ecuador April 2017 – July 2018
RELEVANT PROJECTS	University of Michigan – Biomedical Manufacturing and Design Lab <i>ME 590 – Directed Independent Research</i> <ul style="list-style-type: none">Designed, modeled, and prototyped elements to hold biopsy device and microscopic camera during micro-grinding processIncorporated vision-feedback system for live control of micro-grinding process, achieving 50-micron accuracy that allowed successful modification of ~1 mm diameter needle tipsPerformed needle tip deflection experiments and analyses to choose ideal tip shape	Ann Arbor, MI January 2019 – April 2019
CAMPUS INVOLVEMENT	Membership Co-Chair, Mechanical Engineering Graduate Council 3D Printing Club	September 2019 - Present January 2019 - Present
SKILLS	<i>Computer:</i> Inventor, AutoCAD, Solidworks, MATLAB, Python, Hypermesh, LS-Dyna <i>Languages:</i> English (fluent), Spanish (native) and German (basic)	
AWARDS	Charles Vest Award , University of Michigan, 2018 Fulbright Foreign Student Program Scholarship , Fulbright Ecuador, 2018 Becas Internacionales Posgrado Senescyt , Senescyt Ecuador, 2018	