Gabriela Bravo-Illanes

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Education

Stanford University *Stanford, CA*
Master of Science in Mechanical Engineering **Sept 2019 – Jun 2021**
Concentrations: Robotics and Mechatronics GPA: 4.0/4.0
Relevant Coursework: Introduction to Robotics, Advance Robotics, Experimental Robotics, Principles of Robots Autonomy, Machine Learning, Smart Product Design A & B (Mechatronics), Introduction to sensors

Pontifical Catholic University of Chile (PUC) *Santiago, Chile*
Bachelor of Science, Mechanical Engineering **Mar 2009 – Jun 2014**

Skills

Languages: Spanish (Native), English (TOEFL iBT: 101 – 26R/30L/24S/21W)
Design: CAD, Mechatronics, Prototyping, Design for manufacturing, GD&T, static FEA, Design thinking
Programming: ROS, Git, C/C++, Python, Matlab, LabView, Arduino, Linux

Robotics Experience

Amazon Lab 126 *Sunnyvale, CA*
Consumer Robotics Design Engineer. **Aug 2021-Present**
Working in the next generation of Astro Robot

Stanford University *Stanford, CA*
Research: Intelligent prosthetic arm **Apr 2020-Jun 2021**
Development of a prosthetic arm capable to assist user based on EMG signals and mixed reality. The arm will be capable to predict user intentions to simplify the user's control of the arm. This project is under development on its early stages and is being done in collaboration with a PhD student.
• Bibliography review to understand the state of the art and define following steps of the project.
• Prepared a simulation in ROS using the Franka Emika Panda arm to test some concepts.

Course Project. Simulation of a Grocery Shopping Robot (CS225A) **Sep 2020-Nov 2020**
• Collaboration in a team designing and simulating on SAI 2.0 a panda arm over a Mobile platform that pick objects from a basket and place them over a surface

Mechatronic and Automation Experience

Stanford University *Stanford, CA*
Course Projects. Mobile Robot (ME218B) **Mar 2020**
• Collaborated in a team designing and building an autonomous robot capable to orient following IR signal and colors on the floor. Robot was capable of grab and transport an object using an electromagnetic arm.
• Designed and assembled digital and analog circuits. Components included DC motors, accelerometers, IR emitter, IR receiver, electromagnet and color sensors.
• Coded on C hierarchical state machines to control robot.

Course project. Arcade game "Protect the Dome" (ME218A) **Nov 2019**
• Designed and build an arcade game. The user interacted with a joystick and a button to shoot down meteorites (represented as LED), block air leaks (place a plug detected by hall effect in a hole where a fan was turned on), and move a crack to power the dome (turning a DC motor).
• Designed and assembled digital and analog circuits. Coded in C state machines to control the game. Collaborated in a team to complete the project.

HART Lab, University of California Berkeley *Berkeley, CA*
Research Engineer **May 2018 – Apr 2019**
• Developed, prototyped and tested of a knee-motion tracking system using IMU sensors and a novel algorithm written on Matlab. Product designed to monitor recovery on patients after a knee ligament reconstruction(*).
(*)Co-authored publication: ieeexplore.ieee.org/document/8857431

Power Train Technologies *Santiago, Chile*
Internship. Designed a machine that measures spring const. **Apr 2013 - Oct 2013**
• Created a mechanism and software (in LabView) to automate a machine that tested the injector spring of mining trucks.

Other Design Experience

Amazon *Seattle, USA*
Hardware Development Engineer Intern **Jun 2020 – Sep 2020**
•Worked for Amazon Prime Air, Systems Engineering Team. Developed a simulation software on Python of multiple drones. Simulation outputs helped to take system level decisions.

Mutual de Seguridad *Santiago, Chile*
Research and Development Engineer **Feb 2016 – Jul 2017**
• Designed and fabricated assistive tools for people with reduced mobility. These tools were 3D printed and designed in collaboration with physicians and occupational therapists (OT). OT did not need to handcraft these tools, and at the same time, offered to the patient a cheaper, aesthetically pleasant, washable alternative.
• Fabricated anatomical models for complex surgery planning using patient's computed tomography and a 3D printer.
• Designed and fabricated skulls implants in collaboration with neurosurgeon. A 3D printed mold was fabricated based on patient's CT scan, sterilized, and used to create implant with Cranioplastic®. This alternative was up to 50% cheaper than the current provider.
• Co-funded the Laboratory of Clinical Innovation. This laboratory serves as a hub where health professionals and engineers can develop technologies that facilitate and assist rehabilitation, surgery planning and diagnosis.
• Spoke in several congresses about the application of 3D printers in a clinical environment.

SKF Chilena SAIC *Santiago, Chile*
Internship. Designed a software for fatigue analysis. **Dec 2013 – Feb 2014**
• Designed a software in Matlab that computes remaining life of a component based on its load history measured with a strain gauge in its critical point.

Pontifical Catholic University of Chile *Santiago, Chile*
"La Ruta Solar" race participant **2011**
Collaborated in the design and construction of a motorized tricycle, powered by PV panels.

Leadership Experience

INSPIRE *Albany, CA, USA*
Volunteer as event organizer **Jul 2018 – Jun 2019**
• Planned and hosted events for a community of people who has moved to the East Bay area from a different country or state. Events included book clubs, cooking workshops, museum visits, among others.

Linde High Lift Chile S.A. *Santiago, Chile*
Quality Engineer **Apr 2015 – Feb 2016**
• Directed and implemented new quality standards to improve internal processes and customer service in all branches (5) along the country.

Pontifical Catholic University of Chile *Santiago, Chile*
Co-founder and event organizer of ME Student chapter **Apr 2013 – Jun 2014**
• Organized activities for students to improve their skills and knowledge about mechanical engineering.

Additional Experience

YWCA Berkeley/Oakland *Albany, CA, USA*
Volunteering as a mentor in TechGYRLS Program **Sep 2017 – Apr 2018**
Taught and developed activities to promote interest in science and technology in young girls.

Pontifical Catholic University of Chile *Santiago, Chile*
Course Assistant **Aug 2011 – Dec 2014**
• Lectures: "Properties and strength of materials" (2011-2014), "Dynamics of mechanical systems" (2012), "Mechanics of solids" (2012), "Mechanical behavior of materials" (2013-2014), "Thermodynamics" (2014).

Undergraduate researcher **Aug 2012 – Nov 2012**
• Conducted experiments to develop metallic foams from powders in viscous liquids for implants with osteointegration.

Selected Honors and Awards

Chilean National Scholarship for Graduate Studies. Becas Chile – CONICYT (2019)
Volunteer Leadership Award. YWCA (2018)
Best Graduate in the Mechanical Engineering Department. PUC (2014)
Recognition for dedication and commitment in the work of teaching assistant. PUC (2013)