

Sergio Alejandro Rosales Vargas

STUDENT · M.Sc. SPACE ENGINEERING

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“Aim to the stars.”

Personal Profile

I am a student of the Space Engineering master program. Mechatronics engineer who likes challenges and learning new things. I see myself as a passionate person with perseverance, thoughtfulness and perceptiveness. Always ready to expand my abilities and skills. Currently looking for positions in Space Technology and Development.

Education

University of Bremen

Bremen, Germany

M.Sc. in Space Engineering

April 2022 - Current

- **Master project (ongoing):** Research in techniques to mitigate errors of CNNs in radiation space environments.
- **Courses:** FEM simulations for the design of space systems, Fluid Handling in spacecrafts, Structural design and analysis, Control theory, Orbital systems.

Catholic University of Bolivia “San Pablo”

Cochabamba, Bolivia

Bachelor Degree in Mechatronics Engineering

February 2013 - February 2018

- Graduated with Honor Distinction: Top of the 2018 class.
- **Main occupational skills covered:** Automation and control engineering, Signal processing, Fluid mechanics and thermodynamics, Programming.
- **Bachelor thesis:** Design and development of a prototype robot to explore and detect cracks in drinking water pipes using Convolutional Neural Networks.

La Salle High School

Cochabamba, Bolivia

High School Diploma

December 1999 - December 2012

- Passed with Distinctions.

Work Experience

IMEMED

Cochabamba, Bolivia

Research and Development Engineer

April 2020 - March 2022

- Full time job in collaborative research and development of medical equipment.
- Developed and manufactured the company's first medical equipments:
 - ✓ The first intensive care unit medical ventilator in Bolivia.
 - ✓ A X-Ray portable machine of 2DOF.
 - ✓ Prototype of a PSA oxygen concentrator plant of $180 \text{ m}^3 \text{ h}^{-1}$.
- Collaborated with the software development team in back-end and front-end solutions for the 3 prototype equipments.
- Led the electronics design team of 4 people and managed the design process of PCB prototypes for the ICU ventilator from the conceptualization up to manufacturing and testing in the span of 2 years.
- Carried out technical presentations to business partners, governmental institutions and medical facilities in 3 regions of the country.
- Carried out negotiations with international technology partners, such as Masimo, Bürkert and Demcon to reach OEM solutions for the company and product acquisition deals.
- **Technical Skills:** C#, Wpf, C++, Solidworks, MATLAB, Simulink, Altium Designer, Eagle Designer, Microsoft Office, \LaTeX .
- **Soft Skills:** Leadership, Adaptability, Communication, Decision Making, Teamwork, Resource Management, Negotiation skills, Presentation skills.

Catholic University of Bolivia “San Pablo”

Cochabamba, Bolivia

University lecturer

July 2020 - December 2020

- Teaching of the subject “Basic Physics” for newly admitted students.
- Developed the program adapted to online lectures.
- **Soft Skills:** Creativity, Integrity, Communication, Empathy.

AGROINBO TFD

Cochabamba, Bolivia

Control and Automation Engineer

November 2018 - December 2019

- Designed and implemented the complete system of automation for the process of dehydration of almonds which improved productivity of the company in 300% and reduced time duration of production in 80%.
- Designed the electric layout using CAD modeling tools and executed the implementation of the cable net connection.
- Characterized the system and designed a thermal mathematical model of the almond ovens through sensor measurements.
- Conceptualization and implementation of a closed loop control system using a LOGO PLC to fully automate the production lines.
- Designed the peripherals for the system automation and programmed the safety routines for the controller.
- **Technical Skills:** MATLAB, Simulink, Ladder programming, LOGO! Soft Comfort, AutoCAD Electrical.
- **Soft Skills:** Problem solving, Constraint optimizations, Resourcefulness, Logical thinking.

Catholic University of Bolivia “San Pablo”

Cochabamba, Bolivia

Teacher assistant

March 2015 - December 2016

- Auxiliary in teaching of the lectures of Electronics and Circuit Design.
- Laboratory assistant of the subjects of Electronics and Circuit Design.
- **Soft Skills:** Communication, Organization.

Extracurricular Projects

Development of a hybrid solar car

Cochabamba, Bolivia

Catholic University of Bolivia “San Pablo”

June 2016 - November 2016

- Member of the student group that conceptualized and to developed a hybrid solar car for the university.
- Collaboration in the design of the mechanical structure of the “Catomóvil” prototype using CAD softwares.
- Management and organization of the mechanical design team and scheduling of the tasks.
- Machining and performance testing of the mechanical structure.
- Integration and assembly of the electrical and mechanical systems.
- **Technical Skills:** Solidworks, TIG Soldering, Bender.
- **Soft Skills:** Collaborative work, Mechanical skills, Time Management.

Volunteering

Avionics Team Member

Cochabamba, Bolivia

ASTRA e.V.

November 2022 - Current

- Electronics designs prototyping, soldering and testing.
- Programming flight computer and testing the elements of the Kalman Project Rocket.
- Support in ASTRA's technical and non-technical activities.

Instructor Volunteer Team Member

Cochabamba, Bolivia

IILC Latinamerican Institute of Leadership Cristóforos

May 2018 - November 2019

- Volunteer during leadership and oratory courses.
- Planification and instruction of the activities in oratory courses.

IEEE Student Branch Chair

Cochabamba, Bolivia

IEEE Student Branch of the Catholic University of Bolivia “San Pablo” - Cochabamba

January 2018 - January 2019

- Founding member of the first IEEE Student Branch of the Catholic University of Bolivia “San Pablo” - Cochabamba.
- Management of the Student Branch recruitment and promotion of events.
- Scheduling and planification of technical and non-technical activities for the Student Branch.
- Interface between other branches of the region.

Logistics Team Member



Cochabamba, Bolivia

TEDx UCB Cochabamba




May 2017 - August 2018

- Member of the planification team of the first TEDx event in Cochabamba.
- Management of logistics activities of assets needed in the main event.


Achievements

2021	Solidworks CSWP - Professional Mechanical Design , Dassault Systèmes  cv.virtualtester.com/qr/?b=SLDWRKS&i=C-6GQU72M943	Bolivia
2021	Specialized Program - Spacecraft Dynamics and Control , University of Colorado Boulder in partnership with Coursera  coursera.org/account/accomplishments/specialization/certificate/MPLTGNFBA2V5	Bolivia
2021	Goethe-Zertifikat B2 , Goethe Institut	Bolivia
2020	TOEFL iBT , ETS	Bolivia
2018	Specialization in Automation and Industrial Control , Ideas Automation with sponsorship of Schneider Electric	Bolivia
2013	Fully funded Coca-Cola scholarship for the entire Bachelors Program , Coca-Cola Foundation	Bolivia

Academic Recomendations

M.Sc. Edwin Calla Durandal Advisor and colleague Advisor in my Bachelor Degree Thesis project and then worked together in multiple projects.	Bolivia  Ecalla.d@ucb.edu.bo
Ph.D. Luis Molina Professor in university courses Mentor and University professor in the subjects of Electronics I and II.	Bolivia  luis.molina@stconsultingbolivia.com
Ph.D. Jaime Ruffo Antezana Arzabe Natural Sciences Director Academic guide during my undergraduate courses.	Bolivia  jantezana@ucb.edu.bo

Skills

Programming	MATLAB, Simulink, Simscape, C/C++, C# (Front-end, Back-end), Wpf, Python (Pandas, NumPy, Tensorflow.), R, PLC Programming, SCADA.
CAD Design	AutoCAD, SolidWorks, Ansys Mechanical, Altium Designer, Eagle Designer
Soft Skills	Leadership, Adaptabiliy, Decision Making, Communication, Teamwork, Resource Management, Negotiation skills, Presentation skills, Perserverance, Assertiveness.
Miscellaneous	 (Overleaf/MikTex), Microsoft Office, Git.

Languages

English	Professional proficiency C1
Spanish	Native proficiency C2
German	Advanced proficiency B2
French	Basic proficiency A1

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Synera Hiring Manager

April 21, 2023

KONSUL-SMIDT-STR. 8U
28217 BREMEN

Reference: Position as a Working Student - Engineering Product Support

Dear Hiring Manager,

I was recently notified about the position for a working student at your company, Synera. My name is Sergio Rosales and I am a student of the Master program of Space Engineering at the University of Bremen. You will find out soon that my skills are well suited for the job and additionally, that my professional background matches precisely what you are looking for.

With my bachelor degree I developed myself mostly in mechanical design and programming. Hence for my first position I gained strong insight in MATLAB and Simulink by successfully designing controllers for automation processes. As a result, I was able to maneuver problems, manage situations efficiently, and learned to optimize the use of resources. Shortly after I pursued and acquired a CSWP certification in SolidWorks design from Dassault Systèmes.

Additionally I worked in software development in a research and development company, where I was tasked with front and back-end solutions of user interfaces for medical equipment, using .NET Framework, Wpf and C#. Soon I advanced to the position of leader of the electronics design team, managing the programming of microcontrollers in C++ and the design of printed circuit boards. This helped my leadership skills significantly, improved my teamwork capabilities, expanded my knowledge of synergy work, and most importantly, I applied my agile traits.

Finally, I feel comfortable with new challenges and I am confident in my capacity to assimilate new concepts quickly to further develop myself in other working areas. I look forward to the opportunity to share experiences with my colleagues and likewise learn from them. I am thankful in advance for considering me for this opportunity and I expect to make this experience the most rewarding not only for myself but for the company as well.

With utter enthusiasm I look forward to your reply.

Sincerely,

Sergio Alejandro Rosales Vargas

*Enclosure:
Resume*