Sergio Alejandro Rosales Vargas

STUDENT · M.SC. SPACE ENGINEERING

Max Von Laue Straße 5, 28359 Bremen

+49-163-8917040 | ✉ rosalesergius@gmail.com | in linkedin.com/in/sergio-alejandro-rosales-vargas/

"Aim to the stars."

ArianeGroup Bremen Hiring Manager   *March 17, 2023*

AIRBUS-ALLEE 1

28199 BREMEN

Reference: Position in Support for Thermal Development Tasks for the Ariane 6 Launcher

Dear Hiring Manager,

My name is Sergio Rosales and I am a student of the master of Space Engineering at the University of Bremen. I have been following the offers of the ArianeGroup for student jobs for some time. That is why the publication for this position on LinkedIn really caught my attention. You will find soon that my skills are well suited for the job and moreover, you will see that my professional background matches precisely what you are looking for.

During my past work experience, I learned the importance of applying my knowledge in real life applications. I had the opportunity to deepen my skills in MATLAB and Simulink by successfully running multiple simulations in order to design controllers for production processes. As a result, I was able to maneuver problems, manage situations efficiently, and learned to optimize the use of resources. I consider that I bring important skills and experience with me to the company, that complement my studies in meaningful ways.

Additionally, I had the chance to work with a research and development team. During this time, I developed my leadership skills, improve my teamwork capabilities, expand my knowledge of synergy work, and most importantly, I applied my agile traits. I worked in software development, I was tasked with front and back-end solutions of user interfaces, using .NET Framework, Wpf and C#. Other tasks included programming microcontrollers in C++. But most importantly, I became the leader of the electronics design team. I handled the design process from conception all through prototyping and testing. With all that in mind, my experience in research and technology gave me the necessary insight to further develop myself in other working areas. I feel comfortable with new challenges and I am confident in my capacity to assimilate new concepts quickly.

In conclusion, my goal in the company is to learn everything that I can and offer all my abilities and experience in return. Being from Latin America I became aware of the importance of cultural exchange and that is why 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

Sergio Alejandro Rosales Vargas

Student · M.Sc. Space Engineering

Max Von Laue Straße 5, 28359 Bremen

📱+49-163-8917040 | ✉ rosalesergius@gmail.com | in linkedin.com/in/sergio-alejandro-rosales-vargas/

"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, Vector mechanics.
- **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 $m^3\,h^{-1}$.
- Collaborated with the software development team in back-end and front-end solutions for the 3 prototype equipments.
- Led the 4-people eletronics design team 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 parters, 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:** Altium Designer, Eagle Designer, C#, Wpf, C++, Solidworks, MATLAB, Simulink, Microsoft Office, LaTeX.
- **Soft Skills:** Leadership, Adaptabiliy, 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.
- **Soft Skills:** Creativity, Integrity, 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 measurents.
- 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.

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.
- 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

- Eletronics 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 plannification 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 plannification team of the first TEDx event in Cochabamba.
- Management of logistics activies of assets needed in the main event.

Achievements

2021	**Solidworks CSWP - Professional Mechanical Design**, Dassault Systèmes	*Bolivia*
	cv.virtualtester.com/qr/?b=SLDWRKS&i=C-6GQU72M943	
2021	**Specialized Program - Spacecraft Dynamics and Control**, University of Colorado Boulder in partnership with Coursera	*Bolivia*
	coursera.org/account/accomplishments/specialization/certificate/MPLTGNFBA2V5	
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	**Full founded Coca-Cola scholarship for bachelors degree**, Coca-Cola Foundation	*Bolivia*

Academic Recomendations

M.Sc. Edwin Calla Durandal
Bolivia

Advisor and colleague
✉ Ecalla.d@ucb.edu.bo

Advisor in my Bachelor Degree Thesis project and then worked together in multiple projects.

Ph.D. Luis Molina
Bolivia

Professor in university courses
✉ luis.molina@stconsultingbolivia.com

Mentor and University professor in the subjects of Electronics I and II.

Ph.D. Jaime Ruffo Antezana Arzabe
Bolivia

Natural Sciencies Director
✉ jantezana@ucb.edu.bo

Academic guide during my undergraduate courses.

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	LaTeX(Overleaf/MikTex), Microsoft Office, Git.

Languages

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