rodrigo-schmitt.github.io
São Paulo - Brazil
rodrigo.schmitt@usp.br
/in/rodrigo-schmitt

RODRIGO SCHMITT

MOTIVATION

A major driver in the coming two decades will be the return of human explorers to the Moon. Furthermore, the challenges involved in long-distance human exploratory missions such as Mars are surely one of the most ambitious human endeavors ever taken.
I chose to play an active role in the transformation of humanity to a multi-planetary species because I don't want to watch it happen. I want to become a valuable asset in this venture of space exploration.

SKILLS

Software

Python
Microsoft Office
LaTeX
Matlab
C
Fortran
Fusion 360
LINUX
ANSYS
HTML
SQL

Languages

Portuguese
English
Spanish
Japanese

ADDITIONAL EDUCATION

- **Winter School - Introduction to Space Technologies (INPE)**
  3-week-long, 100h (07/19)
  Team Project with 30 people.
- **Spacecraft Dynamics & Control Specialization**
  Kinematics, Kinetics & Controls.
  CU Boulder (on Coursera).

EDUCATION

Bachelors of Science in Astronomy
University of São Paulo, Brazil | 02/15 - 08/19
#1 in class (one extra semester due to exchange program).

Bachelors of Science in Physics
University of São Paulo, Brazil | 08/19 - 12/19
Double degree.

Exchange Program
University of Notre Dame du lac, USA | 01/18 - 05/18
Final GPA: 3.8/4.0.

Masters in Space Engineering
National Institute for Space Research, Brazil | 08/20 - Present
Focus Area: Space Mechanics & Controls

RESEARCH

CubeSat development
Dr. Jane Hetem - University of São Paulo | 02/17 - 06/17
Printed Circuit Board electronics and Arduino programming in C.
Vacuum testing in laboratory.
Successful launch and recovery in a helium balloon to 30 km.

Orbit Determination Programming
Dr. Helio Kuga - National Institute for Space Research| 07/17 - 12/17
Developed Fortran codes for orbit determination.
Comparison with data from brazilian satellite.

Mineralogical Analysis of an Apollo 16 Lunar Basalt
Dr. Clive Neal - University of Notre Dame du lac | 01/18 - 06/18
Lab work using electron microprobe.
Statistical analysis of element compositions.

Low Thrust Transfer Orbit Optimization
Dr. Antonio Prado- National Institute for Space Research| 07/18 - Present
Development of a 3D model of the Van Allen Belts.
Optimization of thousands of low thrust transfer orbits.
Fortran, C and Matlab algorithms.

Six-Degree of Freedom Rocket Trajectory Simulation
Dr. Bruno Carmo - University of São Paulo | 03/19 - Present
Python algorithm with six degrees of freedom.

ORGANIZATIONS

International Recruitment Advisor
AIESEC, University of São Paulo | 10/15 - 06/16
- Volunteer in a team of 5 people.
- Received around 20 international students to work in São Paulo in 4 multinational and 2 national companies.

ACHIEVEMENTS

Poli/USP Scholarship - 2017 Spaceport America Cup
Given to 12 students from Project Jupiter to compete at the 2017 SA Cup.

2017 Spaceport America Cup
4th place out of 9 in the "10k ft SRAD Solid" category.

Brazilian Rocket Competition - 2017 COBRUF
Overall winner out of 25.

2017 AUCANI International Mobility Scholarship
Given to 1 student for a semester abroad at University of Notre Dame.

2018 NASA Student Launch
10th place out of 45.
Education Engagement Award .

CNPq Fellowship - Scientific Research
07/2018 - 10/2018.

FAPESP Fellowship - Scientific Research
11/2018 - 12/2019.

INTERESTS

Buddhism
Naturalist buddhism and eastern philosophy in general

Parkour
Conquering mind and body through physical challenges

Hiking
From Brazil's mountains to US' national parks

We are what we repeatedly do. Excellence, then, is not an act, but a habit.

Will Durant

Marketing Manager of Outgoing Volunteering Programs
AIESEC, University of São Paulo | 07/16 - 12/16
- Volunteer in a team of 6 people.
- Weekly data analysis of customer market (Excel).
- Alignment of sales and customer experience (PowerPoint).
- Development of buyer personas.

Aerodynamics & Structures Member
Project Jupiter - Rocket Design Team, University of São Paulo | 07/16 - 06/17
- Optimal sizing of rocket parts through merit function analysis.
- Vacuum infusion manufacturing of carbon-fiber structure.
- Imperius: rocket launched to 10,000 feet.

Marketing Director
Project Jupiter - Rocket Design Team, University of São Paulo | 01/17 - 06/17
- Leader of a team of 4.
- Attracted 69 people to Recruitment Process.
- Articles for blogs and magazines with thousands of subscribers.

Structures Member
Notre Dame Rocket Team, University of Notre Dame du lac | 01/18 - 05/18
- Model, laser cut, and 3D print of parts of the vehicle.
- Murphy: rocket launched to 5,280 feet.

Structures Coordinator
Project Jupiter - Rocket Design Team, University of São Paulo | 08/18 - 07/19
- CAD in Fusion 360, Structural Analysis in ANSYS Mechanical.
- Manufacturing of carbon-fiber laminated structure.
- Caldene: rocket launched to 3,000 feet.
- Callisto: rocket launched to 10,000 feet.

Teacher and Data Scientist
Let's Code Academy | 02/20 - Present
- Teacher of the following courses:
Python Pro (x5) (48h), Python for Finance (x2) (24h), Coding Tank (24h), Python Bloomberg - MOOC (20h), Data Science & Artificial Intelligence (72h).
- Data Science Squad member: Data analytics and AI modelling.

PUBLICATIONS

TECNOLOGIAS ESPACIAIS APLICADAS AO PLANEJAMENTO URBANO
2019 CINASAMA - Congresso Internacional de Saúde e m International Congress of Health and Environment.
***Schmitt R. N.**, Santos T. R., Rodrigues L. M. T., Santos V. C. S., Barros J. D. | 2019*

OPTIMIZATION OF LOW THRUST TRANSFER ORBITS OF A SPACECRAFT CONSIDERING THE RADIATION HAZARD FROM THE VAN ALLEN BELTS
AIAA/AAS 2019 Astrodynamics Specialist Conference.
Volume 171 of the Advances in the Astronautical Sciences Series.
***Schmitt R. N.**, Sukhanov A. S., Barbosa G. & Prado A. F. A. B. | 2019*

ANOMALOUS RARE EARTH ELEMENT PROFILES FROM PLAGIOCLASE-RICH IMPACTITES FROM APOLLO 16: EVIDENCE FOR A KREEP INFLUENCE
In preparation to Geochimica et Cosmochimica Acta.
*Fagan A.L., **Schmitt R.N.**, Cronberger K., Neal C.R. & Simonetti A.S. | 2020*

ROCKETPY: A SIX-DEGREE OF FREEDOM LAUNCH VEHICLE PYTHON SIMULATION
In preparation to the Journal of Aerospace Engineering.
*Ceotto G. H., **Schmitt R. N.** , Alves G. F. , Pezante L. A. & Carmo B. | 2020*