



THE ROAD FROM COSTA RICA TO THE INTERNATIONAL SPACE STATION

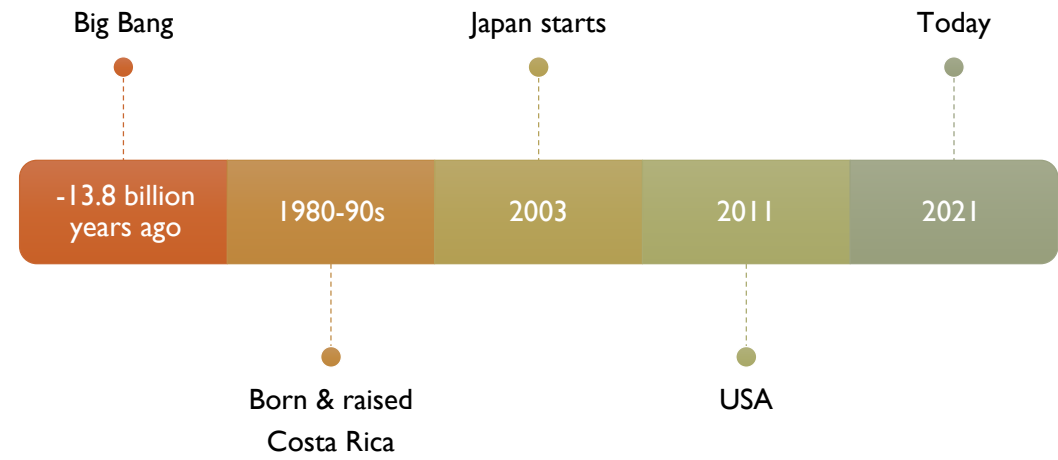
Dr. Andres Mora Vargas

2021-09-01

Blue Origin

“New Gutierrez” Team

HI!



COSTA RICA

- Born & raised
 - Travelled about every two years somewhere
 - Hard time at the beginning of High school
 - Inspired by Costa Rican-American former NASA astronaut, Franklin Chang-Diaz
 - Did not get accepted 1st choice university
- Exchange visit in Houston
 - Met Dr. Chang-Diaz at his Advanced Space Propulsion Laboratory (ASPL), Johnson Space Center, NASA
- Graduated from College and had internship at ASPL.
 - Worked with the VASIMR
 - Met my future mentor, Dr. Alberto Behar
- Returned to Costa Rica
 - Unemployed for several months
 - Applied for Japanese scholarship
 - Worked in payroll and construction
 - Started M.Sc. Electrical Engineering at University of Costa Rica



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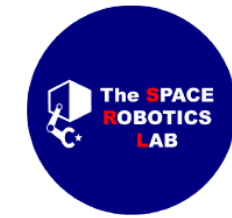
Ad Astra Rocket Co

JAPAN

- New life
 - Cultural shock
 - Language
 - Friends
- Entrance exam(s)
 - One or two visits to the ER
- Research (Work) / Life
 - Master, PhD.
 - International Space University
 - Europe, China, Australia, USA
- Career opportunity
 - Took leap of faith



CC



Space Robotics Laboratory



TOHOKU
UNIVERSITY
Tohoku University



International Space University



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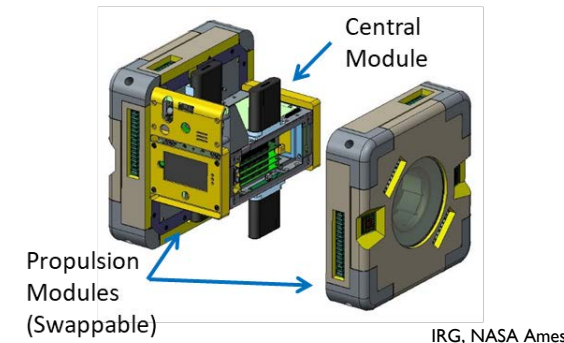
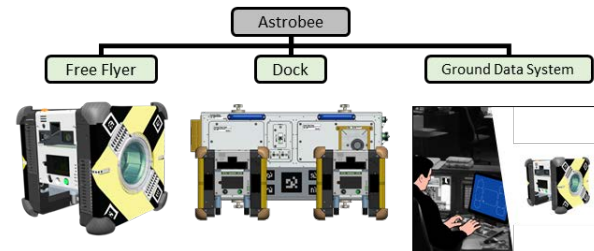
USA

- ASU
 - Only six month contract
 - Awarded two proposals
 - First patent
- Unemployment...
- NASA Ames
 - Underground autonomous system
 - Astrobees
 - BioSentinel

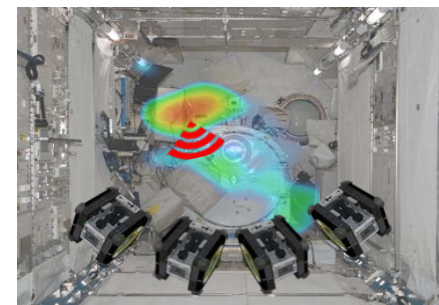
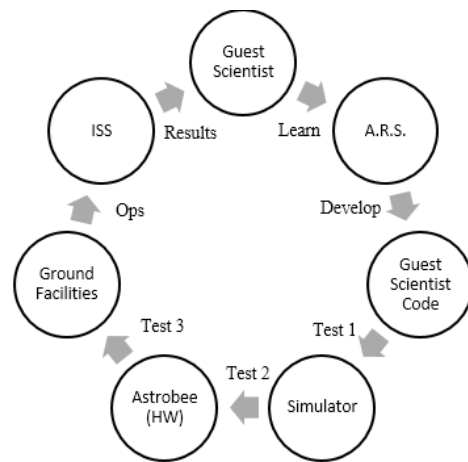


ASTROBEE

- Astrobee research platform ecosystem
 - Astrobee hardware: Ground and flight units
 - Ames Research Center Experimental Facilities
 - Astrobee Robot Software
 - Access to the International Space Station
- Support different research: AI, manipulation, computer vision, HRI, many, many other fields!



IRG, NASA Ames



IRG, NASA Ames

Isolating faults: Ultrasonic leak detection



IRG, NASA Ames

Off-load routine astronaut tasks: Robotic cargo transfer

TEAM WORK

- How can we operate a robot over 400km away?
- [Chris Cassidy meets Astrobee](#)
- Deadlines, technical issues, different timezones and working cultures, and excited students!
- [JAXA's Kibo Robotic Programming Challenge](#)



NASA



NASA



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GROWING CIRCLE



PURA VIDA!

#TogetherWereBetter



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