Harrish Joseph

europass

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EDUCATION AND TRAINING

21/09/2017 – 27/01/2021 – Rome, Italy

MASTERS IN SPACE AND ASTRONAUTICAL ENGINEERING – Sapienza University of Rome

Main Course: Control systems, Space Guidance and Navigation systems, Space Flight mechanics, Spacecraft Design, Space missions and systems, Multi-body Space structures, Space Robotics and systems.

Thesis: Range Delay due to Io Plasma Torus for ESA's JUICE mission

93/110 | EQF level 7 | ECTS | 120 | https://www.uniroma1.it/it/pagina-strutturale/home

10/06/2010 – 11/05/2014 – Coimbatore, India

BACHELOR OF TECHNOLOGY IN AEROSPACE ENGINEERING – Karunya University

Thesis: Mathematical Modelling and feasibility of Propulsion due to Vibration of Hexagonal cavity structure

7.13 | https://www.karunya.edu/

WORK EXPERIENCE

06/01/2017 – 09/08/2017 – Chennai, India

SOLUTION ENGINEER – KKM SOFT PVT. LTD.

Trained undergraduate students in design and analysis softwares.
Management of staffs for software training.

PROJECTS

Role of AI in Earth Observation Satellite

On-going research work on the implementation of AI in data compression, optimization of satellite algorithms to increase reliability and data quality of earth observation satellite.
Collaborating with a team of 18 international students and space industry professionals.

Analysis of multi-body space structure

https://app.luminpdf.com/viewer/60451e1ccc00a900116ab975
Dynamic equation of motion for flexible satellite orbiting earth was implemented and solved numerically using Matlab to analyze the structural response during different control schemes.
Verified the results with Msc Adams vibrations due to control schemes .

Tele-medicine Spacecraft Constellation

https://app.luminpdf.com/viewer/60451ec3882a9f00129ddba1
A constellation 6 3U cubesat is formulated to provide professional healthcare services to isolated communities in rural regions of Africa.
Collaborated as a team of 5 in System engineering subsystem in formulating Risk management plan according to ECSS standard.

Optimization of Two Line Element(TLE) using Optical observation of Satellite

https://app.luminpdf.com/viewer/60451ea2cc00a900116ab986
Developed Matlab code to determine the orbit using TLE data.
Optimization of orbital elements was made to TLE data with use of optical images of the spacecraft.

Optical tracking of space debris in GEO

Contributed to a project on debris tracking in Geosynchronous region with a grid of six DSLR cameras. Development of synchronized shutter system using NMEA sentences from GPS signal with help of Arduino micro-controller.

08/09/2020 – 26/01/2021
Range Delay due to Io Plasma Torus for JUICE mission

https://app.luminpdf.com/viewer/60451c9b1a568a00115a9107
Computation of Range delay in tracking of JUICE spacecraft due to the Io Plasma torus to account for the propagation medium in 3GM (Gravity and Geophysics of Jupiter and the Galilean Moons) experiment. Used NAIF-SPICE toolkit to calculate the line of sight TEC values from JUICE to Earth.

01/12/2019 – 07/03/2020
Manipulator control, trajectory planning and localization

https://app.luminpdf.com/viewer/60451ec9882a9f00129ddba5
Worked on course work project on controlling a 3 arm planar manipulator using linear and non-linear control using Matlab.
And developed trajectory for a lunar rover and implemented Kalman filter for estimating the pose from odometer and Lidar sensor data.

DIGITAL SKILLS

Proficient User of MATLAB | Programmin language PYTHON | Good listener and communicator | Microsoft Office: Word, Excel, Access, Power Point, Outlook. | AGI System Tool Kit (STK) | Expert user of NAIF-SPICE | interdisciplinary thinker, generalist, open, eager to learn, curious | Leadership and management skills | Scripting in Python and/or Bash

VOLUNTEERING

24/09/2020 – CURRENT
Space Generation Advisory Council (SGAC)

Member of Small satellite Project Group
Member of international and interdisciplinary forum focused on different aspects of the growing small satellite industry. Currently working on the application of Artificial Intelligence in Earth Observation small satellites.

HOBBIES AND INTERESTS

Reading Books

Satisfies my curiosity to learn and develop my skills on technological, cultural, interpersonal and intrapersonal affairs.

Travelling

Helps in broadening my perspectives of life and self-development.

LANGUAGE SKILLS

Mother tongue(s): **TAMIL**

Other language(s):

ENGLISH | **ITALIAN**