

Anant Kumar Telikicherla Kandala

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RESEARCH/WORK EXPERIENCE

University of Alberta

Edmonton, Alberta, Canada

Graduate Research Assistantship Fellowship

September 2022 to Present

Working on the design and development of the High Energy Particle Telescope for the RADiation Impacts on Climate and Atmospheric Loss Satellite (RADICALS) mission. Also, working on designing a sounding rocket payload to characterize electron microbursts.

Indian Space Research Organisation (ISRO)

Bangalore, India

Scientist/Engineer-C, Human Space Flight Center(HSFC)

January 2021 to May 2022

Worked as an Assembly, Integration, and Testing (AIT) engineer for the Crew Module electrical systems of ISRO's human spaceflight mission (Gaganyaan).

Nanyang Technological University (NTU)

Singapore

Research Intern, Satellite Research Centre (SaRC)

Jan. 2020 – May 2020

Developed a rocket payload for monitoring the Solar Spectral Irradiance from the low earth orbit. I worked on Flight Software, PCB Design, Environmental Testing and submitted the work as my undergraduate thesis.

Laboratory for Atmospheric and Space Physics (LASP)

Boulder, Colorado, USA

Summer Intern

May 2019 – August 2019, May 2018 – August 2018

Students system engineer for INSPIRESat-1, INSPIRESat-3 and INSPIRESat-4 small satellite missions. I was involved in the INSPIRESat-1 mission from design to launch and post-flight operations. My key contributions include On-Board Computer design, flight software testing, and on-orbit commissioning. I also worked on solar soft X-ray data analysis and modeling for the INSPIRESat-1 DAXSS instrument.

EDUCATION

University of Alberta, Canada

GPA 4.0

Master of Science (Thes.) in Electrical & Computer Engineering, Photonics & Plasmas

Sep. 2022 – Present

Indian Institute of Space Science and Technology, Trivandrum, India

CGPA 8.29/10

Bachelor of Technology, Electronics and Communication Engineering (Avionics)

Aug. 2016 – Aug. 2020

Amity International School, New Delhi, India

95.4 %

Senior Secondary examination CBSE Board (High School)

Aug. 2014 – May 2016

AWARDS AND ACHIEVEMENTS

NTU-India Connect Visiting Research Student Scholarship

Jan. 2020

Sponsored by the School of Electrical & Electronic Engineering at the Nanyang Technological University

Singapore

Frank J. Redd Student Paper Scholarship Competition

Aug. 2019

Honorable Mention Award (\$3,000 USD), 33rd Annual AIAA/USU Conference on Small Satellites

Logan, Utah

CONFERENCE PUBLICATIONS

1. **Anant Kumar T.K.** et al. Mission Concept for demonstrating Small-Spacecraft True Anomaly estimation using Millisecond X-Ray Pulsars. In *Proceedings of the 35th Annual AIAA/USU Small Satellite Conference, Science/Mission Payloads, SSC21-VI-08*, Utah, USA, August 2021.
<https://digitalcommons.usu.edu/smallsat/2021/all2021/178/>
2. **Anant Kumar T.K.** et al. Design and Development of a PS4-OP Payload for Solar Spectral Irradiance Measurements and Technology Demonstration of Small-Satellite Subsystems. In *Proceedings of the 35th Annual AIAA/USU Small Satellite Conference, Swiftly Session 4: Instrumentation, SSC21-S1-15*, Utah, USA, August 2021.
<https://digitalcommons.usu.edu/smallsat/2021/all2021/115/>

3. **Anant Kumar T.K.** et al. Development of a Power-Efficient, Low Cost, and Flash FPGA based On-Board Computer for Small-Satellites. In *Proceedings of the 35th Annual AIAA/USU Small Satellite Conference, Swiftly Session 7: Command & Data Handling, SSC21-S1-50*, Utah, USA, August 2021. <https://digitalcommons.usu.edu/smallsat/2021/all2021/125/>
4. **Anant Kumar T. K.** et al. Design and development of a 3U Cubesat for In-situ Radiation Dosimetry. In *Advances in Small Satellite Technologies, Proceedings of the 2nd National Conference on Small Satellite Technology and Applications-2020*, Trivandrum, India, December 2020. https://doi.org/10.1007/978-981-19-7474-8_20
5. **Anant Kumar T. K.** et al. Development of a PS4-OP payload for technology demonstration of Small Satellite subsystems. In *Advances in Small Satellite Technologies, Proceedings of the 2nd National Conference on Small Satellite Technology and Applications-2020*, Trivandrum, India, December 2020. https://doi.org/10.1007/978-981-19-7474-8_9
6. Srivastava Sarthak, **Anant Kumar T. K.**, and Glenn Franco Gacal. INSPIRESat-4 / ARCADE: A VLEO Mission for Atmospheric Temperature Measurements and Ionospheric Plasma Characterization. In *Proceedings of the 33rd Annual AIAA/USU Small Satellite Conference, Session VIII: Frank J. Reed Student Competition, SSC19-V-06*, Utah, USA, August 2019. <https://digitalcommons.usu.edu/smallsat/2019/all2019/140/>
7. Spencer Boyajian, . . . , **Anant Kumar T. K.** . . . , et al. INSPIRESat-1: An Ionosphere and Solar X-ray Observing MicroSat. In *Proceedings of the 33rd Annual AIAA/USU Small Satellite Conference, Session V: Next on the Pad, SSC19-V-06*, Utah, USA, August 2019. <https://digitalcommons.usu.edu/smallsat/2019/all2019/93/>
8. Amal Chandran, . . . , **Anant Kumar T. K.** . . . , et al. A Very Low Altitude Satellite for Equatorial Ionosphere Measurements. In *Proceedings of the 33rd Annual AIAA/USU Small Satellite Conference, Session V: Next on the Pad, SSC19-V-03*, Utah, USA, August 2019. <https://digitalcommons.usu.edu/smallsat/2019/all2019/90/>

JOURNAL PUBLICATIONS

1. Amal Chandran, . . . , **Anant Kumar T. K.** . . . , et al. The INSPIRESat-1: Mission, science, and engineering. *Advances in Space Research*, 2021. <https://doi.org/10.1016/j.asr.2021.06.025>

PRESENTATION AND NEWSLETTERS

1. Thomas N. Woods, James P. Mason, and **Anant Kumar T. K.** INSPIRESat-1 DAXSS Data Release for Solar Soft X-ray Spectral Irradiance. *SolarNews: The Electronic Newsletter of the AAS Solar Physics Division*, Issue: 01 August 2022. <https://solarnews.nso.edu/inspiresat-1-daxss-data-release-for-solar-soft-x-ray-spectral-irradiance/>
2. The Big Adventures of Small Satellites. *The Sounding Rocket: Student newspaper of Indian Institute of Space Science and Technology*, Issue: 16 July 2020. <https://medium.com/the-sounding-rocket/the-big-adventures-of-small-satellites-b5012162ea56>
3. Crisel Suarez, Bennet Schwab, and **Anant Kumar T. K.** DAXSS Data Plotting and Fitting using PyXSPEC. *Solar Physics High Energy Research (SPHERE) workshop*, 13 July 2022. <https://sphere.boulder.swri.edu/presentations/>

OTHER PROJECTS

Mission Concept and Analysis for X-Ray Pulsar Navigation Aug. 2020 – Dec 2020
Indian Institute of Space Science and Technology Dr. Priyadarshanam Hari, Dr. Samir Mandal

Developed a single parameter (true anomaly) position estimations algorithm using X-Ray Pulsar timing measurements. Created a simulation using Python and Astropy to validate the algorithm

Systems Engineering for 3U CubeSat for Radiation Dosimetry May 2018 – May. 2020
Indian Institute of Space Science and Technology Dr. Priyadarshanam Hari, Dr. Harsha Simha

Designed the satellite instrument based on a RADFET sensor. Worked on the passive magnetic attitude control system of the satellite. Created a simulation in Python to model the satellite dynamics and de-tumbling.