

ALBIN P JAMES

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EDUCATION

Master's in Physics , National Institute of Technology, Calicut (NITC)	10/2020 - Ongoing
Bachelor's in Physics , St. Berchmans' College, Kerala	06/2017 - 04/2020
Senior Secondary , Navajeevan Bethany Vidyalay CBSE, Nalanchira, Kerala	05/2017

ACADEMIC ACHIEVEMENTS

JEST All India Rank 253	2020
JAM All India Rank 1116	2020

AREAS OF INTEREST

Astrophysics and Cosmology | Computational Physics | Scientific Computing | History & Philosophy of Science

RESEARCH & PROJECT EXPERIENCE

Statistical Properties of Dark Matter Halos from Cosmological Simulations	07/2021 - 04/2022
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MSc Dissertation

Supervisor: Dr Charles Jose, Assistant Professor, CUSAT

In the theory of cosmological structure formation, galaxies form in gravitationally bound dark matter clumps called dark matter halos. In this project, we investigate the statistical properties of dark matter halos using numerical simulations. In particular, we estimate the halo mass function, which is the number density of dark matter halo within an infinitesimal logarithmic mass bin. The study uses the data from the AbacusSubmmit simulation. Using the Madhava high performance computing cluster, the data was analysed. Hence the halo mass functions for various redshifts of box sizes 500 MPc/h and 2000 MPc/h were computed. The statistical properties were further studied for redshifts 0.2 and 3 by dividing both the boxes into smaller boxes of 50, 25 and 20 MPc/h.

Development of MATLAB code for the analysis of Magnetometer data	07/2019 - 05/2020
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BSc Dissertation

Supervisor: Dr Lijo Jose, Assistant Professor, SB College

The data was analysed using MATLAB Codes. Te output was manipulated and plotted using Origin Pro. Sensys FGM3D TD magnetometers of Space Physics Laboratory, VSSC Trivandrum placed at Changanassery SB College and Kannur were used to collect the data. The analysis of the magnetometer data during the solar eclipse using the code showed a drastic variation of the ionosphere compared to an average day.

PROFESSIONAL CERTIFICATION

Google IT Support Professional Certification	07/2020
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Google and offered through Coursera

1. Technical Support Fundamentals
2. Operating Systems and You: Becoming a Power User
3. IT Security: Defense against the digital dark arts
4. System Administration and IT Infrastructure Services
5. The Bits and Bytes of Computer Networking

TECHNICAL SKILLS & EXPERTISE

Programming Languages:

Advanced: Python, C++ | Intermediate: MATLAB, LaTeX | Basic: C, HTML, CSS

Miscellaneous: Origin Pro, Slurm
Simulations & Python Packages : GADGET 2, NgenIC, abacusnbody, astropy etc...
Platforms: Linux, Windows, MS Office
Visual & Graphics: After Effects, Premier Pro, Photoshop, Illustrator

CERTIFICATIONS

Data-driven Astronomy The University of Sydney through Coursera	Ongoing
From the Big Bang to Dark Energy The University of Tokyo through Coursera	06/2020
Understanding Research Methods University of London and SOAS University of London offered through Coursera	04/2020
Psychological First Aid Johns Hopkins University and offered through Coursera	12/2019
Philosophy and the Sciences: Introduction to the Philosophy of Physical Sciences The University of Edinburgh and offered through Coursera	08/2019
Introduction to Psychology Yale University and offered through Coursera	07/2019

MEMBERSHIPS

Breakthrough Science Society, Trivandrum Chapter <ul style="list-style-type: none">To promote science among students & general public.To provide students access to seminars and talks by notable researchers free of cost.	5/2021
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POSITIONS OF RESPONSIBILITIES

Deputy Speaker Student Affairs Council (SAC) - NIT Calicut, <ul style="list-style-type: none">I was entrusted with coordinating all the activities pertaining to student body including the research community.	2021-2022
Student Coordinator Science Centre- St Berchmans College, Changanassery, <ul style="list-style-type: none">I researched and hosted an Inter departmental science quiz.Organised an Astronomy workshop and various sky watching sessions.Hosted science exhibitions as part of the science centre.	2018-2020
Secretary Physics Department Association- St Berchmans College, Changanassery <ul style="list-style-type: none">I was instrumental in initiating several programmes and activities in the college on behalf of the association.Organized an All Kerala Inter Collegiate Quiz and presentation competition.	2019-2020
HRD Team Excellence Member Human Resource Department- St Berchmans College, Changanassery Every programmes in the college are carried out by a group of 20 students selected by the Human Resource Department of the college known as 'Team Excellence'. <ul style="list-style-type: none">I was able to co-ordinate with my team to organize several programmes in the college.Organized several National and International seminars in the college.	2018-2019

ACHIEVEMENTS

MG University Kalolsavam Quiz Represented St Berchmans College at MG University Kalolsavam and bagged the runner up position for the consecutive years 2019 and 2020.	
Winner - Major Science Quiz Competitions Won prizes for all major quiz competitions conducted across Kerala. Mainly the one focusing on science. Space and physics quiz are my forte.	

Best Outgoing Student

The best outgoing student of Navajeevan Bethany Vidyalaya during the academic year 2016-2017.

CONFERENCES AND WORKSHOPS

Sagan Exoplanet Summer Workshop on "Circumstellar Disks and Young Planets" NASA Exoplanet Science Institute, California Institute of Technology in Pasadena, CA.	2021
IIA Summer Programme 2021 Indian Institute of Astrophysics	2021
E-Workshop on LaTeX 2021 GITAM Deemed to be University	2021
Creative Science Workshop 2012 Kerala State Science and Technology Museum (KSSTM), Trivandrum	2019

COURSES

Numerical & Computational Physics | Astrophysics | General Relativity | Classical Mechanics | Electromagnetic Theory | Mathematical Physics | Nuclear and particle Physics | Quantum Mechanics | Condensed Matter Physics.