National Level Workshop on Advanced Regression Using R

Date: 29th June 2021, 9:45am – 1:00 pm
Venue: Online, Google Meet

Objective: To celebrate National Statistics Day and bring together bright minds to foster learning, inspiration and wonder and provoke conversations that matter by providing a hands-on session in Data Analytics using R.

Abstract: Department of Science, CAIAS organized a National Level Workshop (Online) on Advanced Regression Using R on 29th June 2021 from 9:45 AM to 1:00 PM. The resource person for the workshop was Dr Boby John, Technical Officer, Statistical Quality Control & Operations Research (SQC & OR) Unit, Indian Statistical Institute, Bengaluru. The participants include UG and PG students, Research scholars and faculty from various institutions. The host for the day was Ms Divya Ann Chacko from third year BSc EMS. The event started with the

prayer song by Mr Abhishek Pandey from third year BSc CMS, followed by a welcome address by Ms Anna Elizabeth Sebastian from third year BSc EMS. The speaker was introduced by Ms Kessia Binoy from third year BSc EMS.

The resource person, Dr Boby John shared materials required for the workshop with the participants. The material include an introduction to open source packages R and Rstudio. which discusses how to handle data in the package. It also includes how to import or export data using R. A video on the same was made by the resource person and shared with the participants. The initial part of the talk was on Multiple regression analysis. Regression analysis is a supervised learning technique or predictive modeling technique which helps in developing a model and predict the influence of explanatory variables or features over target/response variables. The resource person explained about what a multiple linear regression model is and why it is used. A multiple regression model can work only if there is a relation between at least one explanatory variable and response variable. Multiple linear regression models work on the assumption response variable Y and explanatory variable X are linearly related. If this assumption is violated, we use Modelling Nonlinear relations. Detection of nonlinear relation between predictor X and response variable Y can be made graphically using Scatter plot and Component Residual plots. Dr Boby gave examples from the Process industry and service industry.
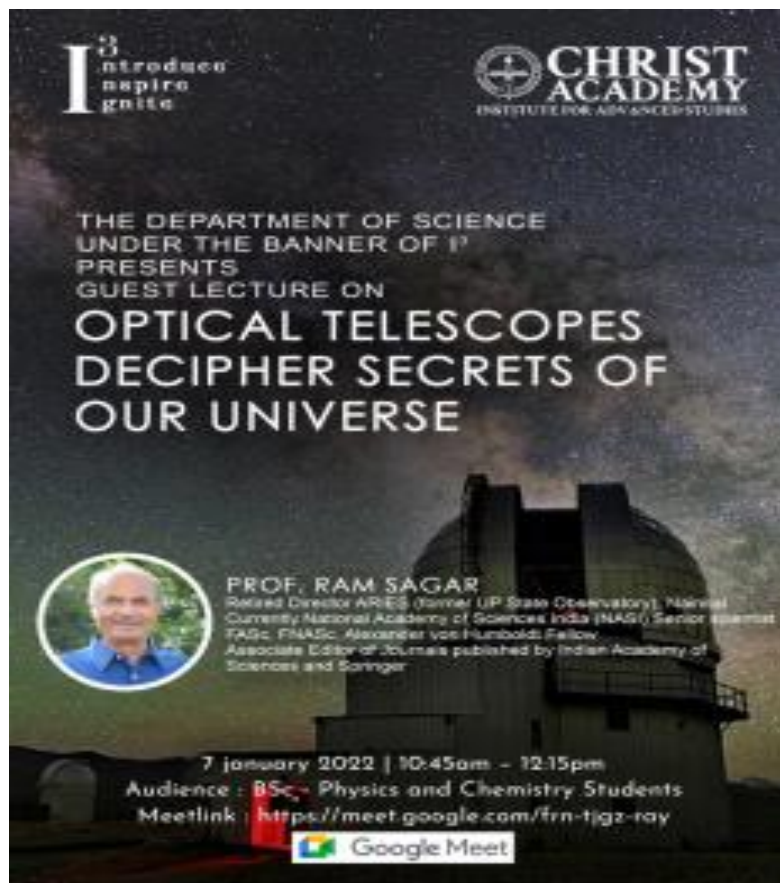
To get hands-on training, the participants were asked to execute the commands in RStudio along with Dr Boby. Dr Boby explained two methods of importing data, viz, using the in-built wizard or using read command. He explained about the use of the R-Script window for writing the program code, how to clean up the data and override the data stored in a file. The Model building steps considered are : Prepare the data for modeling by cleaning up the anomalies, preliminary analysis is to check how the response variable is related to explanatory variable with the help of correlation and develop the regression model. A good model will be significant, reasonably accurate, generalizable and have a good adequacy rate. Generalizability is checked using the validation process.

The session was concluded with vote of thanks by Ms Suvitha from third year BSc EMS. She expressed special gratitude to the chief guest for his informative and useful presentation. She also expressed gratitude to CAIAS management, Head of department of science, event coordinator and faculty for their constant encouragement and support in conducting the webinar. She thanked all the participants in making the webinar a grand success.

Webinar on Optical Telescopes- Decipher the Secrets of Our Universe

Date: 7 January 2022 & 10:45 am to 12:15 pm
Venue: Online, Google Meet

Objective: To give the students a glimpse into the world of optical telescopes and a view of the universe using the technology from the earth.

Abstract: On 7th January 2022, the Department of Science under the banner of I3 ~ Introduce, Inspire, Ignite, organized the first session of guest lecture/webinar on 'Optical telescopes decipher the secrets of our universe' from 11:05 to 12:10 PM through Google Meet. This event was shifted from the offline platform to the online platform with the increase in cases of Covid-19.

The resource person for the event was Dr Prof Ram Sagar, Founder Director:- Aryabhatta Research Institute of Observational Sciences (ARIES) (Retired), currently NASI-Honorary Scientist, FASc, FNASc, Alexander von Humboldt Fellow, Associate Editor of Publications for the Journals published by Indian Academy of Sciences and Springer.

Students were made aware of the need for optical telescopes in the study of the universe. Dr. Ram Sagar also enlightened the students on the projects that are undertaken within India and also that India is a participant at the global level in building large telescopes, therefore, contributing to the knowledge and technological advancements.

The talk began with a birds-eye view of the universe with the classification based on size and brightness/luminosity. The students were taken down a timeline of the advent of technology utilized in and developed over the years from the first telescope developed by Sir Galileo Galilei to the present day. A comparison of the resolving power of the lens of the eye and the present-day telescopes gave the students an edge in looking at the night sky and the universe at large in a completely new perspective.

<u>Softskill Training Program- Parivarthan</u>

Date: 30th & 31st May 2022 / 8:00 am - 1:30 pm
Venue: Online- Google Meet

Objective: To instill the ideas, practices and spirit of the Department of Science, Christ Academy Institute for Advanced Studies and its unique features.

To enable the students to understand and have better relationships with the faculty members and peer group for setting the pace of fruitful teaching learning experiences.

Abstract: Department of Science, CAIAS organized "Parivarthan 2022 – a soft skill training program" on 30th and 31st May 2022 for I year B Sc students in IInd floor seminar hall. Parivarthan is a soft skill development program conducted by the Department of Science for all the first year BSc students every year. Paarivarathan is meant to inculcate the spirit of the Department for the freshers. This program helps the freshers to interact with the faculty members of the department and their senior students. This helps the newly joined students to be comfortable with the students and faculty of the Department of Science.

Ms Annie Shaju of VI semester B Sc EMS was the Emcee for the event. Ms Pallavi & Ms

Yashaswini from final year B Sc invoked God's blessing by a prayer song. Rev Fr Dr Babu Paul presided the event. Rev Fr Dr Babu Paul talked about the importance of skill development for a degree student in this changing world. Dr Sangeetha George K explained about the objective of conducting Parivarthan. The resource persons for the event were Mr. Pradeep Kumar (Assistant Professor, School of Business Management, CAIAS) and Ms. Rose and team (Counseling Team, Christ Academy).

The first and second sessions were headed by Mr. Pradeep Kumar. Life experiences of Mr. Pradeep was inspiring, and encouraged the students to incorporate similar practices in their lives. The sessions were very informative and interactive focussing on personality development, influential communication, time management and team work. The activities conducted gave the

students an opportunity to think outside the box and encouraged them to collaborate with each other enhancing team spirit and coaction. The third session was conducted by Ms. Rose and team. This session focussed on getting to know the peers in a fun and enjoyable way by giving excellent collaborative exercises which were creative.

The second day started with an interactive session with the second and third year BSc students which helped the I year B Sc students get to know them better through fun activities. The first and third sessions were conducted by Ms. Rose and team. The activities in the first session gave us an opportunity to think outside the box and improved the students logical reasoning skills. Students were encouraged to have a focused mind set. The third session taught us life lessons like the importance of making memories in family, the impact of social media, the effect of substance abuse on families and the importance of wearing a helmet. The second session headed by Mr. Pradeep Kumar focused mainly on leadership skills and how nobody is born a leader but rather forced to be one due to circumstances. He encouraged us to believe in ourselves and make the best out of opportunities provided to us.