

PHD IN DATA SCIENCES FOR GLOBAL HEALTH

Applicant Brochure (2022-23)



OVERVIEW

The PhD program in Data Sciences for Global Health, jointly offered by BITS Pilani and the One Health Trust (OHT):

- offers training in global health issues and cutting-edge research methodology with rigorous fieldwork and data analysis.
- provides full-time, advanced education in global health, plus expertise in qualitative and statistical/quantitative skills leading to an interdisciplinary degree.
- has faculty with vast research experience in infectious disease dynamics; antimicrobial resistance; vaccines and immunization; environmental health; gender, equity, and livelihoods; health and development; health systems; and economics.

Students will spend part of their tenure in the program at the BITS Pilani Hyderabad campus and the other period housed at the Nimai Valley Center, the One Health Trust's future headquarters for global health research, education, and action.

Living on the campus will provide opportunities for experiential learning through exposure to conventional and cutting-edge practices, such as ancient regenerative farming techniques that may provide a way to deal with carbon sequestration and livestock-rearing techniques that provide alternatives to antimicrobial usage.

Through visits to nearby agricultural communities and discussions with top scientific and policy experts, students will gain valuable experience with real-world implications in their training as global health professionals.

ABOUT ONE HEALTH TRUST (OHT)

One Health Trust uses research and stakeholder engagement to improve the health and well-being of our planet and its inhabitants. OHT builds on the work of the Center for Disease Dynamics, Economics & Policy (CDDEP), which for more than a decade conducted vitally important research on major global health challenges, including COVID-19, antimicrobial resistance, hospital infections, tuberculosis, malaria, pandemic preparedness and response, vaccination, medical oxygen shortages, and noncommunicable diseases. OHT's work now expands to take on issues related to climate change, biodiversity protection, and the effect of human diets on the planet.

One Health Trust believes that answers to the world's most critical questions lie between disciplines. Accordingly, OHT researchers employ a range of expertise—economics, epidemiology, disease modeling, risk analysis, clinical and veterinary medicine, geographic information systems, and statistics—to conduct actionable, policy-oriented research.

OHT has offices in Washington, D.C., and Bangalore, India, with researchers based in North America, Africa, and Asia. Our projects lead to policy recommendations and scientific studies published in leading journals. We are experienced in addressing country-specific and regional issues as well as global challenges. Our research is renowned for innovative approaches to design and analysis, and we communicate our work to diverse stakeholders.

ABOUT BITS PILANI

BITS Pilani offers undergraduate, postgraduate, and PhD programs to over 17,000 students across its campuses in Pilani, Goa, Hyderabad, Mumbai, and Dubai. BITS Pilani was declared an Institution of Eminence by the Ministry of Education, Government of India in 2020.

QS World University Subject Rankings 2022 has ranked BITS Pilani globally at

- i) 101-150 in Pharmacy
- ii) 301-350 in 2 subjects namely, EEE and Chemical Engineering
- iii) 401-450 in Computer Science
- iv) 501-550 in Chemistry
- v) 551-600 in Physics & Astronomy



BITS Pilani was ranked among the top 300 in QS World University Graduate Employability Rankings 2022 and within the top 8 in India. In the NIRF 2021 rankings, BITS Pilani was ranked 3rd in Pharmacy and 17th in the University category. In QS Asia University Rankings 2022, BITS Pilani was ranked 194th, the only private institute from India in the Asia Top 200, and 18th in India. The Institute secured over Rs 375 crore in external research grants in the last 5 years. State of the art facilities have been developed to support cutting edge research, led by students and about 925 faculty members, leading to a Scopus h-index of 135, about 19,100 publications with over 1,80,320 citations as per Scopus Database and with 112 patents filed in the last 5 years, and 14 patents granted. Recently, BITS Pilani was chosen by DST, Gol to establish a Technology Innovation Hub on Bio-Cyber Physical Systems with a grant of Rs 125 Cr - the only non-Government institute amongst the 25 chosen nationally for this prestigious grant. Recent studies have identified BITS Pilani at #3 in terms of number of Indian start-ups founded by the graduates of an institute. Currently, there are 12 BITSian Unicorns and 1 Decacorn. There are over 7,500 BITSian founders and co-founders of enterprises.

PHD IN DATA SCIENCES FOR GLOBAL HEALTH

NIMAI VALLEY CENTER

“The campus is surrounded by forest land on three sides and it’s agricultural land on the fourth side. A place as beautiful as this demands a beautiful campus. We are building about 20,000 sq. ft of office area and 20,000 sq. ft of accommodation, all of which is designed in a manner to be close to nature. Of the ten acres, a quarter of the property is returning the land to forest land. So, the actual campus building is surrounded by forest, agriculture, and water bodies.”

-Founder and President of the One Health Trust, Dr. Ramanan Laxminarayan

Set on ten acres in a breath-taking valley in Nandi Hills in Karnataka (India) surrounded by forest and farmland, it is located just 40 minutes north of Bangalore International Airport. The Nimai Valley Center brings together the natural environment, agriculture, animals, and human health in the spirit of One Health. It is in a natural setting to inspire global conversations, ideas, and action.

The center will span 42,000 sq. ft of space for cutting edge research labs, smart classrooms, and accommodation for visiting researchers and doctoral students. It will be surrounded by lush forests, natural reservoirs, and fields for organic agriculture.

The Nimai Valley Center envisions to



INSPIRE- Provide serene environments to stimulate creativity and intellectual discourse.

INTEGRATE- Pay homage to local customs in its architecture and cultural relevance.

INNOVATE- It will be a solar-powered campus with net zero carbon emissions and zero water waste along with organic farming to support on-campus dining.

PHD IN DATA SCIENCES FOR GLOBAL HEALTH

HOUSING AND ACCOMMODATION



- Students are encouraged to spend time on the BITS Pilani, Hyderabad campus or OHT India campus, contingent on their research area and stage of their program.
- OHT will be able to provide housing on campus (expected completion: 2024/2025).
- Students are expected to cover their cost of stay/living at both institutions.

HOW TO APPLY

Applications to the PhD program are invited from candidates with a master's degree in any basic science or arts discipline. We also accept applications from candidates with a bachelor's degree in medical/dental/veterinary/ pharmaceutical/ alternative health sciences and engineering. Applicants from other fields are also encouraged to apply.

Application portal: www.bitsadmission.com/phdmainds.aspx



APPLICATION PACKAGE

- A statement of research purpose (max. two pages) indicating the candidate's academic background, broad research interests, career goals, and details of how a PhD in Data Sciences for Global Health will advance their career; and
- Two letters of recommendation.

Shortlisted applicants will be interviewed about their knowledge of global health, data sciences, and research interests. OHT will participate in the interviewing panel. No written exam will be offered, but grades from previous written exams will be considered.



MINIMUM ELIGIBILITY CRITERIA

- ME/MTech/MPharm/MBA/MPhil: minimum of 60 percent aggregate
- MSc/BE/BPharm or an equivalent degree: minimum of 60 percent aggregate
- MA: minimum of 55 percent aggregate
- MBBS/BDS/BVSc/MD/MDS/MVSc/BAMS/BHMS/BUMS/allied

We welcome applications from all professional, geographic, cultural, and socioeconomic backgrounds, with no age restriction. Meeting the minimum eligibility criteria does not guarantee admission into the program. All admitted candidates will be required to do the standard coursework in the first two semesters.

FINANCIAL AID

All successfully admitted students will have financial support through the following two sources:

- **Self-funded fellowships:** UGC/CSIR NET JRF, DBT JRF/SRF, ICMR JRF/SRF, DST Inspire Fellowships
- **BITS-OHT doctoral fellowships:** A BITS Pilani Fellowship of Rs. 28,000/month during the first year, provided for up to five years from the date of admission; can be enhanced to Rs. 31,000 per month from the second year on and to Rs. 35,000 per month after the second year based on the student's performance and output.

PROGRAM CURRICULUM AND REQUIREMENTS

The students must complete six core courses covering three main subjects (24 credits) during the first year. The first-year coursework is expected to help students build a strong theoretical foundation in global health and equip them with data management and analysis skills. Before the end of their second year, students will defend their thesis proposal and research plan. From their third year on, PhD candidates will present their work at seminars, conduct fieldwork, and communicate their research outcomes through research papers that will form a PhD dissertation. Students must maintain a minimum grade of D and CGPA of 5.50 throughout all semesters. Each academic year will have two semesters



First year

The first year will be conducted at BITS. The students must complete six core courses:

- Global Health Management I and II
- Data Sciences (includes Research Methodologies) I and II
- Health Economics and Policy I and II

A qualifying exam will be held at the end of the first year. Students will be promoted to the second year only if they pass at least two of their main subjects. The exam will include a written test and oral exam on the courses taught. BITS and OHT will jointly conduct both exams.

Second year

- In the second year, students will draft a detailed research proposal to undertake thesis work and submit to their advisory committee for review. The students should take independent study/classes from faculty members from BITS Pilani or OHT, in their research areas of interest (directed individual study), as they work on their research proposal and papers.
- A rotation method can be used to learn from various faculty members. Students are also encouraged to learn grant writing from their notional supervisor(s) and apply for research grants. At the end of each semester, students are expected to submit term papers based on their research.
- Students are strongly encouraged to find a potential advisor(s) during their second year. The main advisor will be from BITS Pilani, and their coadvisor can be from OHT. Students will also choose a two-member doctoral advisory committee (DAC) from among the faculty members of BITS Pilani and OHT.
- A candidacy/oral exam will be held at the end of the fourth semester. The exam will include an oral presentation on the research proposal developed in the second year. The proposal will be defended to a peer group and faculty of the concerned departments. Following proposal approval, students can then register for thesis units (maximum of 10 units per semester). A minimum of 40 thesis units should be completed to submit the thesis for examination.

Third year through finishing the PhD program (fifth semester and beyond)

After advancing to PhD candidacy, students are expected to present their progress at least twice each semester to their supervisors and DAC and to submit progress reports to their respective DAC members at least once per semester. Students are also encouraged to present their research in seminars or conferences organized by BITS, OHT, and elsewhere.

- **Fieldwork:** Students are required to undertake field visits at OHT's Nimai Valley Center. They may conduct quantitative or qualitative data collection corresponding to their research interests.
- **Dissertation Defense:** Students will prepare a thesis in consultation with their team of supervisors and present/defend to their DAC. They will be required to write three research papers, which will form their dissertation, and publish in peer-reviewed journals to graduate.

Degree completion

PhD candidates must submit a thesis within five years to successfully complete the degree. Students may be allowed to seek an extension from the doctoral counseling committee through their doctoral research committee, based on the project's requirements and circumstances.

CAREER OPPORTUNITIES

Public health is a data-driven field. With data diversity rapidly increasing, the demand for public health data scientists with expertise in collating and managing complex and granular health data is on the rise. The need to communicate these results to stakeholders and policymakers is also urgent.

This program is ideal for students who are seeking new roles as public health data scientists in government, nonprofit, and for-profit organizations in the public health and biomedical fields and working professionals already employed in such organizations who would like to use data more effectively to advance their missions.

- Understand potential sources of bias in data sources relevant to public health.
- Formulate data-driven questions using existing data sources.
- Manipulate and transform data to perform meaningful analyses.

- Apply appropriate statistical methods to draw scientific conclusions from data.
- Apply methods for big data to reveal patterns, trends, and associations.
- Visualize and interpret data, and succinctly communicate results and findings.

A partnership between one of the top life sciences programs in the world and a leading health research think tank, the BITS-OHT program will provide our graduates distinction in competitive career environments.

This course offers an excellent platform into exciting career opportunities. You will get the chance to perform research in the real world, with a range of exciting project opportunities, including positions in data science and AI in large pharmaceutical companies and health data companies.

MEET YOUR ADVISORS



Dr. Ramanan Laxminarayan

Dr. Laxminarayan is the founder and president of OHT. He is a senior research scholar at Princeton University, affiliate professor at the University of Washington, senior associate at the Johns Hopkins Bloomberg School of Public Health, and visiting professor at the University of Strathclyde in Scotland. Dr. Laxminarayan chairs the board of GARD-P, a global product development partnership created by the World Health Organization (WHO) that aims to develop and deliver new treatments for bacterial infections. He is founder and board chair at HealthCubed, which works to improve access to health care and diagnostics worldwide. He has a PhD in economics from the University of Washington.

Dr. Laxminarayan's work has been widely covered in major media outlets, including the New York Times, Washington Post, Associated Press, BBC, Financial Times, CNN, Economist, and Science. His research includes more than 300 books, book chapters, and peer-reviewed papers in leading journals in science, medicine, and economics.



Dr. Azra Hasan

Azra Hasan is the Head of Academic Programs at the One Health Trust. At OHT, Dr. Hasan provides strategic direction for academic programs to accomplish our vision of providing educational interventions and advanced training in various global public health sciences.

Before joining OHT, Dr. Hasan worked as a clinical microbiologist in government and private hospitals in India and in the NHS, United Kingdom. She worked primarily in university teaching hospitals and held teaching positions for over 20 years, in which she guided several research projects for medical and nursing students.

She also served as an editor at Elsevier Publications in Microbiology. Her work on infectious disease diagnostics, AMR, and antimicrobial treatments has been published widely in national and international peer-reviewed journals. Prior to joining OHT, she also served as a head of laboratory operations, the chair of an antimicrobial stewardship team, a government nodal officer for COVID-19, and an infection control officer (ICO).

Dr. Hasan received an undergraduate medical degree and specialized in Medical Microbiology in her post-graduate education. She was trained at Safdarjung Hospital, New Delhi, and held research posts with All India Institute of Medical Sciences (AIIMS), New Delhi and CSIR, India.



Dr. Deepshikha Batheja

Dr. Batheja has ongoing transdisciplinary work in health and economics, such as designing and assessing the value of biobanks using the conjoint experiment method, examination of acceptability and willingness to pay for COVID-19 self-testing kits in developing countries (WHO project), and studying the impact of oxygen concentrators on alleviating oxygen shortages in India with IFMR. A key thread in her research has been the impact of gender on economic and health outcomes.

Her research has received funding from the International Growth Center (IGC), JPAL under their Post-Primary Education Initiative, BLUM Initiative, China–India Visiting Scholars Fellowship, and the MSD Fellowship for Global Health. Her research work has been featured in World Bank Development Impact Blog, Ideas for India, IGC Blogpost, and Hindustan Times. Dr. Batheja received her PhD in economics from University of California, Riverside.

Her broad research interests are in the fields of development, health economics, and labor economics.



Dr. Eili Klein

Dr. Klein researches the role of behavior in the spread of infectious diseases. He has authored numerous publications on the evolution and spread of antimicrobial drug resistance, particularly the emergence of antibiotic and antimalarial resistance. Dr. Klein is an assistant professor in the Department of Emergency Medicine at Johns Hopkins University.

He has a Ph.D. in ecology and evolutionary biology from Princeton University. His research interests include patterns of antimicrobial drug resistance and the influence of behavior on disease spread.



Dr. Thomas Van Boeckel

Dr. Thomas Van Boeckel is a spatial epidemiologist working at ETH Zurich as an SNF assistant professor. He is also a visiting fellow at OHT. He held positions at Princeton and Oxford and obtained his Ph.D. from the Free University of Brussels.

His research lies at the interface of science and policy. His objective is to accelerate the international response to the rapid rise of antimicrobial resistance. Specifically, he will pioneer the development of a novel type of platform to automate epidemiological data collection and use geospatial methods to map the geographic distribution of four common drug-resistant pathogens found in animals. His broad research interests are in the fields of antimicrobial resistance, disease mapping, spatial epidemiology, and livestock production systems.



Dr. Vijay Chandru Reddy

Dr. Vijay Chandru Reddy is an academic turned entrepreneur and the cofounder and chair of Strand Life Sciences. He has held academic and research positions at Purdue University, MIT, and IISc, Bangalore. He has a PhD in operations research from MIT.

He coauthored the book *Optimization Methods for Logical Inference*, published by Wiley Interscience in 1999. He is also a founder of the Association of Biotech-Led Enterprises and an executive council member. He is one of the inventors of the Simputer. Dr. Reddy was named a Technology Pioneer of the World Economic Forum in 2006 for his work with Strand Life Sciences and biotechnology.



Dr. Giridara Gopal Parameswaran

Dr. Gopal works on building mathematical models for understanding disease dynamics and estimating the cost-effectiveness of interventions targeting specific diseases. Dr. Gopal is one of the leads of iCART, the team behind www.covidthoday.in, which provides daily updates of epidemiologic indicators at the national and subnational levels in India. He has a PhD from the Centre for Community Medicine, in the All-India Institute of Medical Sciences, New Delhi.

His interests include applied epidemiology, operational research, infectious disease modeling, health economics, machine learning/artificial intelligence, policy research, and health system strengthening through digital technology innovations.



Dr. Geetanjali Kapoor

Dr. Kapoor develops partnerships for the control of infectious diseases and mitigation of antimicrobial resistance. She is supporting the establishment of the world's first One Health Demographic and Health Surveillance System, a platform for implementing longitudinal studies across communicable and noncommunicable diseases. She contributed to developing the African antibiotic treatment guidelines for common bacterial infections and syndromes and India's national infection prevention guidelines and state action plans for AMR control. She is also a member of the Joint Programming Initiative on Antimicrobial Resistance scientific advisory board and WHO Advisory Group on the bacterial priority pathogen list.

Dr. Kapoor is a clinical microbiologist by training at Jawaharlal Nehru Medical College, Aligarh, India, and holds a master's in public health from Johns Hopkins University.

Her research interests are antimicrobial resistance surveillance, infectious disease and outbreak management, health systems strengthening, and health policy formulation.



Dr. Erta Kalanxhi

Dr. Kalanxhi leads OHT's efforts to advocate the value of vaccines as a critical tool for mitigating antimicrobial resistance in low- and middle-income countries and collaborates with WHO to develop policy briefs on the implementation of national strategies for antimicrobial resistance. She also contributes to the Mapping Antimicrobial Resistance and Antimicrobial Use Partnership project, which aims to close the knowledge gap on antimicrobial use and resistance in 14 African countries.

Dr. Kalanxhi received a PhD in cancer research from the University of Oslo and an MSc in epidemiology from the London School of Hygiene and Tropical Medicine.



Dr. Arindam Nandi

Dr. Nandi's research at OHT focuses on the value of vaccines, including their long-term health, cognitive, and schooling benefits, and reductions in antimicrobial resistance in low- and middle-income countries. He is working on a disease modeling project estimating the health and economic benefits of the pneumococcal, rotavirus, and HiB vaccines in the Indian context and another project evaluating the impact of COVID-19 on children's vaccination outcomes. Recently, he jointly led the largest-ever field study of the cost of delivering routine vaccination in seven Indian states.

Dr. Nandi worked as an associate at the Population Council. He received his PhD in economics from the University of California, Riverside.

His research interests include health economics, public health, and demography.



Dr. Samantha Serrano

Dr. Serrano writes country of origin expert witness testimony reports for asylum cases in North America and Europe related to health care access and gender- and disability-based violence in Guatemala and Brazil. Before OHT, she taught classes at the Federal University of São Paulo Medical School and other universities on qualitative research methods and social determinants of health. She has worked as a consultant on policy related to migration and COVID-19 response in Latin America and as a multilingual health educator.

Dr. Serrano received her ScD from the Federal University of São Paulo Medical School in Collective Health, where she conducted ethnographic research on the health care and care work experiences of Bolivian immigrant women in São Paulo.



Dr. Gary Lin

Dr. Lin's research at OHT is in computational epidemiology and system science. He uses computational modeling to capture the dynamic behaviors of complex systems. These studies better inform policymakers and can lead to optimal public health outcomes. Dr. Lin primarily focuses on infectious diseases (e.g., COVID-19 and antimicrobial-resistant organisms), health behavior (e.g., meat consumption), and community resilience (e.g., food security, heat waves). His other research interests include health disparities, improving biomedical research, international development, environmental sustainability, and health care decision support.

Dr. Lin has contributed to numerous projects with sponsors such as the MIT Collaborative Initiatives, Bloomberg American Health Initiative, Bill and Melinda Gates Institute for Population and Reproductive Health, National Science Foundation, and the Center for Disease Control and Prevention.

Dr. Lin received his PhD in civil and systems engineering from Johns Hopkins University.

PHD IN DATA SCIENCES FOR GLOBAL HEALTH



Dr. Fardad Haghpanah

Dr. Haghpanah uses an interdisciplinary research background in systems science, resilience, and public health to integrate the principles of complex systems to solve healthcare-related challenges. As a part of the CDC MInD-Healthcare program, his current research is focused on modeling the transmission of healthcare-associated infections in hospitals and communities. His research aims to provide a better understanding of transmission and effects of contact patterns to support policymakers with tools to evaluate the impact of interventions.

Dr. Haghpanah obtained a Ph.D. in Systems Engineering from Johns Hopkins University and a Master's degree in Disaster Risk Mitigation from Politecnico di Milano. His research interests include community resilience, complex systems, modeling disease dynamics, and antimicrobial resistance.



Dr. Sasha Tulchinky

Dr. Tulchinsky is a Senior Technical Programmer based in OHT's Washington, D.C. office. His current work is focused on mathematical and computational modeling of infectious diseases, including antibiotic-resistant pathogens and viral infections, to understand transmission dynamics and predict the effects of interventions. He serves as a technical lead on research for the CDC-funded MInD Healthcare project, which seeks to model the spread of antibiotic-resistant infections in healthcare networks to predict risk to patients and inform prevention strategies.

He received his PhD in Evolutionary Biology from the University of Massachusetts Amherst, where he developed computational models of genetic interactions and host-pathogen coevolution. He has taught general biology, genetics, and molecular biology undergraduate classes at the University of Massachusetts and the State University of New York.



Dr. Amit Summan

Dr. Summan's research primarily focuses on how low- and middle-income countries can improve child and maternal health outcomes through more efficient and equitable redistribution of public resources. Developing countries face a wide breadth of health challenges that are compounded by economic uncertainty and climate change. He has worked on a range of these topics and has published in the areas of child vaccination, fiscal policy taxation for health, cost of government health programs, the COVID-19 pandemic, and food safety.

Prior to joining OHT, Dr. Summan worked as a research consultant at the University of Guelph. He received his PhD from Wageningen University.

His research interests include health economics, child and maternal health, and fiscal policies for health.



Dr. Chhavi Gandhi

After finishing her MD in Clinical Microbiology from Kasturba Medical College, Manipal, Dr. Gandhi gained experience as a microbiology consultant as well as an infection control officer, a position for which she was responsible for identifying and analyzing bacterial, fungal, viral, and parasitic infections, documenting and revising standard operating procedures, as well as monitoring, auditing, and preventing hospital-acquired infections and antimicrobial resistance (AMR) in collaboration with the Hospital Infection Control Committee. She also set up two molecular laboratories with her team and served as a nodal officer during the COVID-19 pandemic, responsible for notifying cases to the government regularly.

She is involved in AMR and infection control-related studies, particularly the surveillance, effects, and use of the One Health approach to curb the effects of AMR.

PHD ADVISORS FROM BITS



Bheemeshwar Reddy A, PhD

Department of Economics and Finance; BITS Pilani, Hyderabad Campus

Bheemeshwar's reach focuses on aspects of public health, particularly on how social and economic inequities contribute to unequal health outcomes. His research interests include causal modelling application in public health and epidemiology, impact assessment of public health policies, and global comparative health systems. Bheemeshwar previously worked on different aspects of child and women's health in India. He is a recipient the SPANDAN grant to study regional variation in dietary diversity and anemia among women in India. He is currently working on various aspects of public health in collaboration with researchers from the University of Cardiff, UK and the Dalla Lana School of Public Health, University of Toronto, Canada.



Durgesh Chandra Pathak, PhD

Department of Economics and Finance; BITS Pilani, Hyderabad Campus

Dr. Durgesh Chandra Pathak holds a PhD in Economics from G.B. Pant Social Science Institute (an autonomous Institute under the University of Allahabad) and a Post-doc experience from Indira Gandhi Institute of Development Research (IGIDR-Mumbai). He works in areas of Public Policy analysis, Intimate partner violence, Public health, Impact assessment of policy measures, migration, applied game theory, financial inclusion, and Poverty analysis and has published papers in these areas. He has expertise in applied microeconometrics and has experience working with NFHS, NSS, and IHDS datasets exploring issues related with intimate partner violence, health outcomes, etc. He can handle field-based studies with equal poise and has recently completed a project of such nature with IMPRESS-ICSSR, New Delhi.



Rishi Kumar, PhD

Department of Economics and Finance; BITS Pilani, Hyderabad Campus

Dr Rishi Kumar is interested in exploring health-related issues, especially in developing countries where these are further complicated by inadequate public funding, insufficient infrastructure, and societal complexities, including social and financial disparities. His research focuses on applying data analysis techniques, econometric modelling, and impact evaluation methods to understand the complex nexus of health, public policies, and welfare implications at different levels. His experience ranges from working on large secondary data sets to designing field studies and working on resultant primary data. He has worked on issues lying at the intersection of health outcomes and gender, the effect of institutional health facilities, factors behind the use of psychoactive substances, and water and sanitation. He has published in well-reputed journals, contributed to government reports, and received competitive funding grants from prestigious institutes, like ICCSR, Shastri Indo-Canadian Institute, National Human Rights Commission, Dvara foundation, Azim Premji University, among others. He is also regularly invited to review research articles in renowned journals. With a master's and doctorate from IGIDR, Mumbai, he is an empirical development economist with expertise in statistical software, including Stata, R, and he seeks to gain unique insights into policy-relevant questions related to health.



Mini Thomas, PhD

Department of Economics and Finance; BITS Pilani, Hyderabad Campus

Dr. Mini Thomas' research interests include examining the socio-economic determinants and outcomes of the relationship between gender and health in the context of the COVID-19 pandemic. She was a contributor for the thematic group on social and structural determinants for the research agenda setting exercise on “Gender and COVID-19”, implemented by United Nations University – International Institute for Global Health (UNU-IIGH), Malaysia, 2020-21. She holds a PhD in Economics from the Institute for Social and Economic Change (ISEC), Bangalore, and has completed research stints at Harvard University (USA) and Reserve Bank of India. She is currently leading a research project funded by Monash University (Australia), which examines the impact of the COVID-19 pandemic on employment. She also completed another research project funded by ICSSR related to financial inclusion. She has published research papers in the fields of macroeconomics and development economics



Subhrakanta Panda, PhD

Department of Computer Science and Information Systems; BITS Pilani, Hyderabad Campus

Dr. Subhrakanta Panda's research interests include social network analysis, to gain insights related to key questions that pertain to the dynamics of the specific network and also possibly for predicting the future patterns of social networks and infer valuable insights from them; applications of blockchains; and medical analytics, to securely store medical records and analyze the stored records to predict future medical complications in patients undergoing treatment of critical diseases like cancer.



Jabez Christopher, PhD

Department of Computer Science and Information Systems; BITS Pilani, Hyderabad Campus

Dr. Jabez's research work is focused on assisting medical centers with strategic knowledge management tasks and clinical decision support in areas related to allergy diagnosis. It involves the application of computer methods and programs for medical informatics. Some of his work is based on decision theory and uncertainty modeling. The objective of the research is to provide rational decision and explainable knowledge. It involves the development of medical decision support systems that aid less-experienced clinicians with interpretable decision-making models. His areas of interest include type-1 & 2 fuzzy arithmetic, decision-making under uncertainty, probabilistic reasoning frameworks, and explainable AI and ML models.



Dipanjan Chakraborty, PhD

Department of Computer Science and Information Systems; BITS Pilani, Hyderabad Campus

Dr. Dipanjan Chakraborty works in the area of Behaviour Change Communication for Public Health with a focus on maternal and child nutrition. He works to build appropriate technologies for resource-poor contexts. He has worked extensively on building voice interfaces for IVR systems. His research interests are in the broad fields of human and computer interaction and technology and society. He has a PhD in Computer Science from IIT Delhi.



Apurba Das, PhD

Department of Computer Science and Information Systems; BITS Pilani, Hyderabad Campus

Dr. Apurba Das is broadly interested in developing data mining and query processing solutions for graph data, medical data, transaction data, network data, and more. The objective of this research is to develop automated diagnostic tools that can diagnose disease conditions based on patient history and historical data and then prescribe medications based on disease symptoms. This can help in primary healthcare in rural India where getting quality medical service is difficult. The goal of this research is two-fold: (1) Developing data structures for efficient storage and retrieval of complex, heterogeneous, high dimensional medical data, and (2) developing algorithms for efficient mining and query processing on the data store.



Jajati Keshari Sahoo, PhD

Department of Mathematics; BITS Pilani, K K Birla Goa Campus

Prof. J.K. Sahoo works in diverse fields of mathematics and computer science, mainly topics closely related to numerical linear algebra, matrix theory, machine learning-based applications, linear algebra, and tensor computations.



Vinti Agarwal, PhD

Department of Computer Science and Information Systems; BITS Pilani, Pilani Campus

Assistant Professor Vinti Agarwal is a machine learning researcher with more than ten years of experience. She is leading a Graph AI research group at BITS Pilani, India, which focuses on applied machine learning to model complex, richly-labeled relational structures, graphs, and networks for systems at all scales to make predictions or discover new patterns. Applications include recommender systems, drug repurposing, and social determinants of health (SDH) modeling for health security.

As a co-principal investigator of MRFF project from CSIRO, Australia, she and her team successfully developed a web application CoviRx (www.covirx.org), for finding repurposed drugs for COVID-19 and also developed a graphML framework to list the top 15 drugs that can be repurposed for COVID-19 treatment. Her work has been selected as a cover story in MDPI Data Journal. Another ongoing project, “Western Australia Transforming Community Health (WATCH),” focuses on developing and validating the software algorithm underpinned by graph theory and machine learning to transform community health in Western Australia by understanding the unmet needs of different populations and their interconnectedness.



Poonam Goyal, PhD

Department of Computer Science and Information Systems; BITS Pilani, Pilani Campus

Professor Poonam Goyal is Professor in the Department of Computer Science & Information Systems, Birla Institute of Technology & Science, Pilani. She specializes in the areas of big data analytics, high-performance computing, multimedia retrieval, computer vision, and natural language processing. Her research has contributed in various social and scientific domains like social media analytics, multi-modal knowledge graphs, bio-informatics, and more.

As a PI of SERB-CRG project from DST, she is working on developing a multi-modal learning system for image and video analytics with multimodal knowledge graphs. In another project as PI with ADOBE, she is working for advertisement learning using multi-modal data. She is also working as PI in a project on wildlife crime data awarded from Google AI for Social Good.