

Job Notification Form, IIT Delhi

Company Overview

Name: Vantage Research

Website: <http://www.vantage-research.net/our-work/>

Company Type: Core (Technical)

Description: Our Vision:

When Vantage Research was founded in 2013, our vision was to build a center of excellence in QSP, and partner with Pharma R&D to make meaningful contributions to human health. Today, we are proudly associated with many global pharmaceutical companies and have contributed to development in areas such as diabetes, rheumatoid arthritis, hypertension, oncology, anemia and sepsis.

The QSP approach is not restricted to Pharma and LifeSciences – we also partner with the Bill and Melinda Gates Foundation to further our understanding of malnutrition in young children, and its deleterious effects on physical and cognitive development in the populations of emerging economies. This problem, when solved, will have a massive impact – from improving individual health, to accelerating GDP growth.

Our Mission:

At Vantage Research, our mission is to apply QSP to improve human health. We welcome you to browse through our website to learn about our work.

Overview about Vantage Research:

Vantage Research provides Quantitative Systems Pharmacology (QSP) Modeling and Simulation services to assist Research & Development in Pharma and LifeSciences. We work hand-in-hand with our clients to build and apply systems models to make critical decisions in various stages of the drug discovery and development lifecycle.

The pharmaceutical industry has had a declining yield of blockbuster drugs in the past few decades – a slow, expensive and failure-ridden drug development process being a significant factor. Historically, a “trial and error” approach proved successful for many decades, but in recent decades, promising breakthroughs in biomedical research have not translated to meaningful medical progress in terms of drugs delivered to the market. The industry has responded by innovating through various new technologies and approaches with the goal of precisely engineering new drugs from the ground up. QSP is one such approach.

Moving away from the traditional pharmacology's focus on “one-gene, one-receptor, one-mechanism”, QSP adopts a systems level view, and uses mathematical models to represent physiological systems. The QSP approach combines the latest biological knowledge gained from experimentation with mathematical modeling and sophisticated computational techniques – the end result is a powerful tool in the hands of R&D teams who are in the process of deciphering a drug's mechanism of action or understanding patient-to-patient variability. This additional understanding of both the disease and drug action, is making a crucial difference to drug discovery and development.

What we do at Vantage:

Several high-value decisions need to be taken when taking a compound from ‘bench’ to ‘bedside’. These could be related to the mechanism of action (e.g. is the target pathway inhibited sufficiently by the compound?) clinical management (e.g. What is the ideal trial design that optimizes dosing across multiple patient populations?) and interpretation of data from experiments or clinical trials (e.g. Does the slower than expected decay of the compound indicate additional

Does the slower than expected decay of the compound indicate additional physiological effects?).

We have worked on modeling and simulation projects in several therapeutic areas as well with research teams in early discovery all the way to design of clinical trials. We find that at the most basic level, modeling increases understanding of the connection between basic physiology and clinical outcomes. Large-scale models serve a knowledge-management function – a team's knowledge (& hypotheses!) of physiology, mechanisms of action, clinical behavior etc. are all aggregated in one tool."What if?" questions can be simulated readily to evaluate competing hypotheses and discrepancies in the data. We use simulations to evaluate between alternate experimental designs that can cost millions of dollars and recommend optimal course-of-action.

We use Quantitative Systems Pharmacology i.e. mechanistic models of physiology to gain insight into these questions. We extend these models to also study the effect of drugs on Virtual Patient populations and suggest optimum trial designs. We use simulations to evaluate between alternate experimental designs that can cost millions of dollars and recommend optimal course-of-action. Finally, we analyze the results of clinical trials and interpret the results in the light of the information gained from our models. This can be used to refine and improve models for further development.

Our current and past projects have been in several therapeutic areas such as sepsis, diabetes, dermatology, anemia, rheumatoid arthritis, hypertension. These projects can be associated with early discovery teams or clinical trial design in phase 3 or 4. We also develop tools for use in parameter estimation and optimization. This is an area which is very relevant to modeling of physiological systems since several parameters in quantitative models are not directly available and are estimated using indirect evidence.

Summary:

We at Vantage Research work on building Mathematical models for Immunology and auto-immune disorders. Our job profile involves building multi-scale models integrating biology from cell, tissue, organ, patient and population level characteristics for disease areas and simulating the same to solve real time problems. We work on projects with top pharma R & D clients across the globe which will provide a great experience on cutting edge research in the field of quantitative systems modeling. Please go through our website for more details (<http://www.vantage-research.net>).

Ideal skill sets preferred for our job profile:

ODE model building for a given biological system and solving them using numerical methods using Matlab/Scilab/R, Parameter estimation and optimization from the system of equations, Evaluation of multiple steady state solutions for a given system, Nonlinear dynamics, Local and global sensitivity analysis and visualization of mathematical functions, Monte-carlo simulations etc

Job Details

Designation: Scientist-Modeling and Simulation

Type: Core (Technical)

Place of Posting: Chennai

Job Details: ODE model building for a given biological system and solving them using numerical methods using Matlab/Scilab/R, Parameter estimation and optimization from the system of equations, Evaluation of multiple steady state solutions for a given system, Nonlinear dynamics, Local and global sensitivity analysis and

Joining By: 30 June 2023

Salary Details

CTC:	1,250,000 INR Per Annum
Gross:	1,250,000 INR Per Annum
Base Salary:	1,250,000 INR Per Annum
Joining Bonus:	0 INR Per Annum
HRA:	0 (min) -0 (max) INR Per Annum
Medical Allowance:	0 (min) -0 (max) INR Per Annum
Other cash benefits part of gross:	0 (min) -0 (max) INR Per Annum
RSUs:	0 INR Per Annum
ESOPs:	0 INR Per Annum
Performance/other bonuses:	0 (min) -0 (max) INR Per Annum
Other cash benefits part of CTC:	0 (min) -0 (max) INR Per Annum

Selection Process

Resume Shortlist:	No
Written Test:	No
Online Test:	Yes
Group Discussion:	No
Medical Test:	No
Personal Interview:	Yes
No. of Rounds:	2-3
No. of Offers:	3

**Recruiting
PHDs:** No

**Eligible
Departments:** B.Tech in Biochemical Engineering & Biotechnology, B.Tech in Chemical Engineering, B.Tech in Civil Engineering, B.Tech in Computer Science & Engineering, B.Tech in Electrical Engineering, B.Tech in Electrical Engineering (Power and Automation), B.Tech in Engineering Physics, B.Tech in Mathematics & Computing, B.Tech in Mechanical Engineering, B.Tech in Production & Industrial Engineering, B.Tech in Textile Engineering, B.Tech and M.Tech in Biochemical Engg & Biotechnology, B.Tech and M.Tech in Chemical Engineering, B.Tech and M.Tech in Computer Science & Engineering, B.Tech and M.Tech in Mathematics & Computing, M.Tech in Applied Optics, M.Tech in Atmospheric-Oceanic Science and Technology, M.Tech in Biomedical Engineering, M.Tech in Chemical Engineering, M.Tech in Communications Engineering, M.Tech in Computer Science & Engineering, M.Tech in Computer Technology, M.Tech in Construction Engineering & Management, M.Tech in Control & Automation, M.Tech in Cyber Security, M.Tech in Electric Mobility, M.Tech in Energy & Environment Technologies and Management, M.Tech in Energy Studies, M.Tech in Engineering Analysis & Design, M.Tech in Environmental Engineering & Management, M.Tech in Fibre Science & Technology, M.Tech in Geotechnical and Geoenvironmental Engineering, M.Tech in Industrial Engineering, M.Tech in Instrument Technology, M.Tech in Integrated Electronics & Circuits, M.Tech in Materials Engineering, M.Tech in Mechanical Design, M.Tech in Molecular Engineering: Chemical Synthesis & Analysis, M.Tech in Optoelectronics & Optical Communication, M.Tech in Polymer Science and Technology, M.Tech in Power Electronics, Electrical Machines & Drives, M.Tech in Power Systems, M.Tech in Production Engineering, M.Tech in Radio Frequency Design & Technology, M.Tech in Rock Engineering & Underground Structures, M.Tech in Solid State Materials, M.Tech in Structural Engineering, M.Tech in Telecommunication Technology & Management, M.Tech in Textile Chemical Processing, M.Tech in Textile Engineering, M.Tech in Thermal Engineering, M.Tech in Transportation Engineering, M.Tech in VLSI Design Tools & Technology, M.Tech in Water Resources Engineering, M.Sc in Chemistry, M.Sc in Cognitive Science, M.Sc in Economics, M.Sc in Mathematics, M.Sc in Physics, M.S.(R) in Machine Intelligence & Data Science, M.S.(R) in Applied Mechanics, M.S.(R) in Biochemical Engineering and Biotechnology, M.S.(R) in Biological Sciences, M.S.(R) in Telecommunication Technology and Management, B.Tech in Civil Engineering and M.Tech in Geotechnical and Geoenvironmental Engineering, B.Tech in Civil Engineering and M.Tech in Water Resources Engineering, B.Tech in Civil Engineering and M.Tech in Structural Engineering, B.Tech in Civil Engineering and M.Tech in Construction Engineering & Management, M.S.(R) in Civil Engineering, M.S.(R) in Chemical Engineering, B.Tech in Textile Engineering and M.Tech in Computer Science & Engineering, B.Tech in Mechanical Engineering and M.Tech in Computer Science & Engineering, B.Tech in Electrical Engineering (Power and Automation) and M.Tech in Computer Science & Engineering, B.Tech in Biochemical Engineering & Biotechnology and M.Tech in Computer Science & Engineering, M.S.(R) in Computer Science & Engineering, Master of Design in Industrial Design, M.S.(R) in Electrical Engineering, M.S.(R) in Energy Science and Engineering, M.S.(R) in Sensors, Instrumentation and Cyber-physical System Engineering, M.S.(R) in VLSI Design Tools and Technology, B.Tech in Mechanical Engineering and M.Tech in Thermal Engineering, B.Tech in Mechanical Engineering and M.Tech in Computer Science & Engineering, M.S.(R) in Mechanical Engineering, M.S.(R) in Materials Science and Engineering, Post Graduate Diploma for Visionary Leadership in Manufacturing, Masters in Public Policy, M.S.(R) in Information Technology