Dr. Dennis Robert
Clinical Research Scientist, Qure.ai
Academic Qualifications: MBBS, MMST

Expertise: AI/ML CAD & RWD Biostatistics, Clinical Data Science

Work Location: Bangalore, India

Medium

CRAN R Package Author
Package Name: autoCovariateSelection
Package Name: MRMCsamplesize

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PROFESSIONAL AND ACADEMIC SUMMARY

Profile and Years of Experience

- **Physician turned Data Scientist** with an overall experience of 11+ years
- 8+ years of industrial experience spanning Software as a Medical Device (SaMD) industry, Pharmaceutical industry and Healthcare IT consulting industry
- 3 years of experience in General Clinical Practice
- Experience as independent contributor and people manager
- **MBBS** (Bachelor of Medicine and Surgery) graduate with a post-graduation in Medical Science & Technology (**MMST**) focusing on Biostatistics and Computational Epidemiology

Medical AI/ML Experience

- **Research Protocol Design & Statistical Analysis** for AI/ML based CAD evaluation studies
- Experienced in AI/ML model development using structured Real-World-Data (**RWD**)
- Clinical Performance Assessment of AI/ML CAD devices for FDA 510 (k) submissions

RWD Observational Data Analysis Experience

- RWD (Truven, Optum, CPRD) analysis – descriptive and inferential statistical analysis
- **Comparative Effectiveness Research** (CER), **Rapid Data Queries** (RDQ)

Programming

- R
- Python

Major Academic Achievements

- **Khorana Scholarship** recipient
- **Kerala State Rank 4 (All India Rank 144)** for the All-India Pre-Medical Entrance Examination (AIPMT), the most competitive medical entrance examination in India

SKILLS

Clinical Data Science, Biostatistical, Technical (Programming) and Functional Skills

- **Biostatistics**
    - Statistical Analysis Plan (SAP) development
    - Multi-Reader Multi-Case (MRMC) study design and statistical modeling
    - Standalone performance analysis of AI/ML and CAD devices
    - Comparative Effectiveness Research (CER) using RWD
    - Confounder adjustment in RWD studies (matching, HDPS algorithm)
    - Survival (Time-to-Event) analysis
- **Classical Machine Learning**
  Source data type: Structured patient level clinical data
    - Logistic & Regularized Regression methods
    - Random Forests
    - Unsupervised learning (clustering)
- **Deep Learning**
  Source data type: Structured patient level clinical data
    - Feed-Forward deep neural networks
    - RNN & LSTM (Project Experience)
- **Epidemiology**
    - Clinical protocol study design for AI/ML (CAD) studies
- **Technical:**
    - R (Expert)
    - sparklyr (Project experience)
    - Python (Project experience)
    - Impala/SQL (Project experience)
- **Functional:**
    - Broad medical domain knowledge
    - Real-World-Data (Truven, Optum, CPRD, OMOP CDM)
    - Medical Ontologies (ICD, NDC, LOINC, CPT, HCPCS, SNOMED, MedDRA, CPRD Read)

Soft Skills

- People management (led a 5-member team of RWD analysts, data scientists and clinical coder)
- Collaborative ways of working with multi-disciplinary cross-functional teams
- Scientific/technical oral presentations

Professional Experience

Organization	Designation	Timeline
qure.ai	Clinical Research Scientist	Aug 2022 – Present
GlaxoSmithKline	RWD Manager – Vaccines and Data Science	Nov 2021 – Aug 2022
Deloitte	Senior Clinical Data Scientist	Nov 2015 – Jun 2021
ResMed	Clinical Specialist	Dec 2014 – Oct 2015
IRCAD Taiwan	Research Fellow (Contract)	Jun 2014 – Nov 2014
IIT Kharagpur	Medical Officer, BC Roy Technology Hospital	Jul 2011 – May 2014

Education

Institution	Degree	Timeline
IIT Kharagpur	MMST (Masters in Medical Science and Technology)	Jul 2011 - Jul 2014
Govt. Medical College Kottayam	MBBS (Bachelor of Medicine and Surgery)	Jun 2003 - Feb 2010

Academic and Professional Awards and Achievements

Academic

- ❖ **Gold Medalist:** Topmost rank in institute in first attempt for All India Pre-Medical Entrance Test **(All India Rank 144, Kerala State Rank 4).** Ranked 144 among more than hundred thousand candidates from all over India in AIPMT exam, the then most competitive and objective medical entrance examination in India.
- ❖ Awarded **Khorana Scholarship** for doing summer internship in University of Wisconsin-Madison, USA in Department of Biostatistics and Medical Informatics
- ❖ Secured 3rd Rank in MG University Kerala for the First Professional MBBS examination
- ❖ Student Paper Competition Finalist in the IEEE EMBS Special Topic Conference on Point-of-Care Healthcare Technologies 2013

Professional

- ❖ Golden Helix Award for Innovation and Outstanding Performance in Deloitte (2020)
- ❖ Rated 1 (highest rating) for best performance for two consecutive times in 2017 and 2018 in Deloitte
- ❖ Received Spot Awards, Bronze and Silver awards for performance in projects in Deloitte and GlaxoSmithKline multiple times

Publications

Journal Publications

1. Hariprasad T, **Dennis Robert**, Anish TS. *A Methodological Rectification in the Global Hunger Index*. Econ Polit Wkly. 2022;57(14):14-17.

2. Hariprasad T, Anish TS, Retheesh K Haridasan, **Dennis Robert**, et.al. *Global covid-19 transmission and mortality - influence of human development, climate and climate change on early phase of the pandemic*. Earth Sp Sci Open Arch. Published online 2021:26. doi:10.1002/essoar.10505823.1

3. Bikas K Arya, Sangeeta Das Bhattacharya, Catherine Sutcliffe, Swapan Kumar Niyogi, Subhashish Bhattacharyya, Hemram S, William Moss, Sameeran Panda, Ranjan Saurav Das, Mandal S, **Dennis Robert**, Ray P. *Impact of Haemophilus influenzae Type B Conjugate Vaccines on Nasopharyngeal Carriage in HIV-infected Children and Their Parents From West Bengal, India*. Pediatr Infect Dis J. 2016;35(11):e339-e347. doi:10.1097/INF.0000000000001266

4. Bikas K Arya, **Dennis Robert**, Sangeeta Das Bhattacharya, Jayanta Mukhopadhyay. *A framework for web based geographical information systems for country wide antimicrobial resistance monitoring*. (2013) Health Policy and Technology, 2 (2) , pp. 85-93

Conference Presentations

1. Emiliano Garza, Mannudeep Kalra, **Dennis Robert**, Sai Kiran, Charu Arora, Manoj Tadepalli, Preetham Putha et. al. *Autonomous AI-based CXR interpretation for predicting congestive heart failure: A multicenter study.* Oral Presentation, RSNA, November 2023.

2. **Dennis Robert**. *An R Package for Estimating Sample Sizes for Multi-Reader Multi-Case (MRMC) Studies.* Poster Presentation, R/Medicine, June 2023.

3. Souvik Mandal, **Dennis Robert**, Rohit Chouhan, Prakash Vanapalli, Vikash Challa, Saigopal Sathyamurthy, Amit Chouksey, Preetham Putha, Ankit Modi. *Using an artificial intelligence algorithm to improve radiologists' performance in detecting pulmonary nodules in chest-CT scans: a multi-reader multi-case study.* Oral presentation, European Congress of Radiology (ECR) 2023, Vienna, March 2023.

4. **Dennis Robert**, Smriti Ridhi, Pitamber Sore, Saniya Pawar, Preetham Putha. *Performance comparison of an artificial intelligence-based algorithm between digital-ray images and mobile photos of x-ray films in detecting signs of tuberculosis.* Oral Presentation, National Conference of Tuberculosis and Chest Diseases (NATCON 2022), Agra, February 2023.

5. Kristin Feeney, **Dennis Robert**, Prerna Patil, Sergey Charkin, Dan Housman, Yuval Koren, Xia Haiping, Jinlei Liu. *Building Deep Learning Models with the OMOP CDM.* Poster, 2017 OHDSI Symposium, October 2017.

6. **Dennis Robert**, Bikas K Arya, Mausom Mallick, Sangeeta Das Bhattacharya, Swapan Kumar Niyogi, Shekhar Chakrabarty, Sutapa Mandal, Subhashish Bhattacharyya. *Association between baseline plasma HIV viral load and nasopharyngeal pneumococcal colonization in children with HIV infection.* Poster presentation in 9th ISPPD, March 2014.

7. Bikas K Arya, Sangeeta Das Bhattacharya, Swapan Kumar Niyogi, Subhasish Bhattacharyya, Sutapa Mandal, **Dennis Robert**, Ranjan Saurav Das. *Pneumococcal carriage in HIV infected mothers and children in West Bengal*. Poster, 9th International Symposium on Pneumococci and Pneumococcal Diseases, March 2014.

8. Bikas K Arya, **Dennis Robert**, Sangeeta Das Bhattacharya, Jayanta Mukhopadhyay. *A framework for web based geographical information systems for country wide antimicrobial resistance monitoring.* Oral Presentation, IEEE PoCHT, January 2013.

Internal Conference Presentations

1. Jennifer Gerber, Dominique Derreumaux, Amoolya Krishnamoorthy, **Dennis Robert**, Emmanuel Aris, et.al. *COVID-19 Vaccine and Booster uptake in pregnant women in the US: A Retrospective Real-World-Data Descriptive Observational Study using Truven Commercial Claims Data.* Poster, GSK R&D Days, June 2022

2. **Dennis Robert**, Nikola Andric, Robert Coopersmith. *Application of Novel Cluster Analysis Techniques for Hypothesis Generation and Acceleration of Biomarker Identification in Life Sciences and Healthcare Industry using Databricks as the Data Science Platform.* Poster, Deloitte Analytics Summit, May 2017