

THOMAS JOSEPH, Ph.D.

Senior Scientist – Digital Pathology – Biomedical NLP – AI in Healthcare
Bengaluru, India – thomas.joseph@tcs.com

PROFILE

Consultant/Senior Scientist with over 17 years of experience in research and development, specializing in the application of natural language processing and AI to the biomedical and healthcare domains. Currently focused on multi-modal analysis in digital pathology for improved patient stratification and treatment planning.

CORE EXPERTISE

- Digital Pathology
- Biomedical Natural Language Processing (BioNLP)
- Information Retrieval & Extraction
- Multi-modal Analysis
- Computational Pathology
- Text-Mining and Network Analysis
- Gene Prioritization
- Phenotype-Genotype Correlations

EDUCATION

Ph.D. Biochemistry

Regional Cancer Centre, Thiruvananthapuram (University of Kerala), India (2004)

M.Sc. Medical Biochemistry

JIPMER, Pondicherry University, India (1995)

B.Sc. Chemistry

Mahatma Gandhi University, Kottayam, India (1992)

SELECTED HIGHLIGHTS

- Domain specialist for digital pathology and NLP projects.
- Extensive publication record in digital pathology and computational biology.
- Key contributor to the development of biomedical literature search and analysis tools.
- Google Cloud Certified Generative AI Leader (August 2025)

EXECUTIVE SUMMARY

A Senior Scientist with a strong background in molecular biology and extensive experience in applying computational techniques to solve complex problems in life sciences. Proven track record in leading and contributing to projects in natural language processing, text-mining, and currently, multi-modal analysis in digital pathology. Adept at translating research concepts into practical applications for improved healthcare outcomes, including patient stratification and treatment planning.

RESEARCH LEADERSHIP & IMPACT

- Application of multi-modal analysis in digital pathology to enhance patient stratification and guide treatment decisions.

- Serves as the biomedical domain specialist for the development and application of the TPX biomedical literature search and navigation tool, a key asset in biomedical research.
- Development of text-mining and network-based approaches for gene prioritization and understanding phenotype-genotype correlations.
- Contributed to the development of solutions for pharma, medical insurance, and hospitals, leveraging text-mining and information retrieval.

PROFESSIONAL EXPERIENCE

TCS Research & Innovation (2007-Present)

Consultant/Senior Scientist (July 2011 – Present)

- Focus on multi-modal analysis in digital pathology, NLP, and information retrieval from biomedical literature.
- Biomedical domain specialist for the TPX tool.
- Text-mining and networks for gene prioritization and phenotype-genotype correlations.
- Team Lead and Project Management.

IT Analyst (April 2007 – June 2009)

- Biomedical domain specialist for the development of NLP tools for biomedical literature.

Strand Life Sciences Pvt Ltd, Bangalore, India (Mar 2005 – Mar 2007)

Module Leader (Life Science)

- Provided functional leadership in creating a biological pathway software product.
- Domain support for the development of an NLP engine.

TECHNICAL SKILLS

Scientific & Domain: Digital Pathology, Computational Pathology, Multi-modal Analysis, BioNLP, Information Retrieval, Text-Mining, Gene Prioritization, Phenotype-Genotype Correlations, Molecular Biology, Biochemistry.

AI / Data: Natural Language Processing (NLP), Text-Mining, Information Retrieval, Network Analysis, Deep Learning, BioNLP tools.