Dr. Thokhir Basha Shaik
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SUMMARY

As a **Researcher** and **Data Analytics professional** with **11+ years of experience** in biotechnology, bioinformatics, and environmental sciences. I've helped organizations like Govt. R&D, Industrial R&D and Academia achieve their goals in molecular biology, **drug discovery, bioinformatics, and environmental health** through my skills in wet-lab techniques, **AI/ML, statistical modeling, and multi-omics data analysis**. In the last three years, I've elevated laboratory standards, increasing staff efficiency by over **40%**. By implementing **AI/ML** methods, I've improved research output accuracy by **12–25%**.

"Mr. Thoukhir is a soft-spoken friendly nature guy. I have known Thoukhir for the past 6 years. He has a sound knowledge of fundamentals and enthusiasm to acquire proficiency in his activities. He is extremely co-operative and possesses the capacity to contribute positively while working as part of a team."

SKILLS

- **Data Analysis & AI/ML:** Python, R, PostgreSQL, Excel, JMP, PAST 4.0, Power BI, Tableau (interactive charts), PCA, ANOVA (one-way/two-way), regression (linear, logistic), cluster analysis, correlation, RDA, descriptive & inferential statistics
- **Bioinformatics:** BLAST, FASTA, Clustal Omega, MEGA, AutoDock, SwissDock, PyMOL, ChimeraX, SwissADME, Ensembl, GeneCards, and KEGG.
- **Analytical & Microscopic Techniques:** AAS, Freez Dryer, HPLC, GC, Gel Doc, Multimode plate Reader, Nanodrop, Sonicaters, NMR, UV-Vis Spectrophotometer. Confocal Microscopy (Nikon A1R).
- **Animal Cell culture** &**Molecular Biology:** SRB, MTT assay, FACS, apoptotic pathway determination, IHC. Dot Blot, Isolation of Plasmid DNA, gDNA and RNA, PCR, RED assay, SDS-PAGE, AG, Western blot, and FPLC (Akta prime and prime plus).
- **Microbiology & Water Microbiology:** MIC, well diffusion, disk diffusion, protein expression and purification; MPN, Total coliform, Fecal coliform, Autotrophic count etc. (APHA). Microbial fermentation (Nitrilase).

EXPERIENCE

SRKR Engineering College — **Bhimavaram, India**
Research **Associate** — Nov 2020 - Present

- Spearheaded procurement and commissioning of advanced analytical instruments (HPLC, Spectrophotometer, Rotavap, N_2 evaporator), ensuring EU compliance to propel international projects.
- Empowered multidisciplinary staff by training them in APHA-standard field sampling and analysis, elevating data quality for the Indo-EU Horizon 2020 SPRING project.
- Developed predictive water quality models and risk indices using PCA, ANOVA, regression, and machine learning (SVM, ANN, XGBoost) in Python.
- Optimized 6+ analytical workflows, reducing downtime by 22% and achieving >98% compliance.
- Generated technical reports and crafted Power BI dashboards, securing grants worth ₹64.92 lakh.

Eesavyasa Technologies Pvt. Ltd — **Hyderabad, India**
Junior Research Scientist — Nov 2017 - April 2019

- Developed and validated six rapid drinking water test kits with manufacturing-ready SOPs for scale-up and deployment.
- Transformed company scrap into functional prototypes through cross-disciplinary collaboration, reducing production costs.
- Authored 10+ technical reports, white papers, and presentations to advocate R&D investments.

CSIR-IICT — **Hyderabad, India**
Project Assistant II & Researcher — Dec 2006 - Sep 2016

- Identified pharma-grade leads by screening 2000+ anticancer compounds, collaborating with King's College London as a UKIERI Fellow, advancing cancer drug discovery.
- Pioneered a patented microbial bioprocess for acrylonitrile-to-acrylic acid conversion, validated via HPLC.

- Synthesized dinucleotide polyphosphate molecules using overexpressed LysU enzyme and purified tubulin proteins (bovine brain, MCF7 cells), and investigated mechanistic pathways via target-based screening of anti-tubulin compounds (SRB, MTT, flow cytometry), uncovering apoptosis induction and cell cycle disruption
- Established the Shapoorji Pallonji Biotechnology Incubation Centre, orchestrating lab setup, instrument procurement, and staff training.

·Independent Research & Data Science Projects:

- Implemented AI-driven herbicide molecules using scaffold-based modeling of commercial herbicides. Leveraged AI tools (Grok, ChatGPT, Gemini) for comparative analysis and toxicity prediction, and evaluated binding activity through docking studies (SwissADME, pkCSM, EPI Suite, and DataWarrior).

EDUCATION

Ph.D., Biotechnology — **Hyderabad, India**.

CSIR-Indian Institute of Chemical Technology & Acharya Nagarjuna University • Hyderabad, India. 2016 - 2019

Thesis topic: "Biological implications of some new cytotoxic agents and development of microemulsion delivery systems"

Supervisors: Dr. Ahmed Kamal, Head Dept. of Medicinal Chemistry & Pharmacology, Prof. Andrew David Miller,

Position: Doctoral Research Scholar (UKIERI Fellow)

Overseas Exchange Program in Drug Delivery formulation — **London, UK**

Kings College, London. 2013, 2016

As part of the UKIERI Fellowship under student exchange program

Master of Science in Biotechnology — **Tiruchirapalli, India**.

Bharathidasan University 2004 - 2006

CERTIFICATIONS

- **Cancer Genomics with NGS**
  Decode LIFE (UDYAM-HR-0003993) • 2024
- **Drug Discovery & Development - 2023**
  Decode LIFE (UDYAM-HR-0003993) • 2023
- **Python for Biologists**
  The Institute of Biotechnological Research (UDYAM-GJ-20-0048064) • 2023
- **Data Science for Biologists Hands-on Internship**
  Biotecnika • 2025 • Bioinformatics Data Science with Multiomics analysis using Python, R and AI/ML

ENTREPRENEURIAL INNOVATIVE PROJECTS

- Developed and deployed organic shrimp and fish feed using natural food waste, with successful field trials and market readiness.
- Designed and fabricated a machine for optimizing the production of organic feed.
- Formulated an aquaculture probiotic currently in field trials to enhance sustainability.
- Developing a novel, self-sealing concrete formulation with engineering applications.
- Engineered a solar-powered, mobile-operated device for spraying fertilizers and pesticides, with a prototype in development.

PUBLICATIONS & WORKSHOPS

Workshops attended:

- Workshop on Interpretation of Instrumental Methods (WIIM-2025) Sathyabama Institute of Science and Technology, CSIR-NML, IIT-Madras, Chennai, India. • January 2–7, 2025.

Resource Person in Workshop:

- National Level 7-Day Hands-On Training Program on Integrative Research in Various Fields of Engineering Sponsored by Department of Science and Technology (DST) under STUTI Program (DST/RND/STUTI/2021/18) SRKR Engineering College in collaboration with GITAM University, India. • September 21-27, 2022.