CURRICULUM VITAE

Preetham Rechihalli Shivalingappa

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OBJECTIVE

Curiosity and creativity are my guiding principles. I always seek to learn new things and use my knowledge and skills to solve problems and help others.

RESEARCH INTERESTS

Flexible Thermoelectric Devices, Nanoelectronics, Bioinformatics (Drug discovery, Phylogenetic analysis), Immunoinformatics (Vaccine Development), Machine Learning.

EXPERIENCE

- **Research Assistant at REVA University**: From Nov 2024 to till date.

- **Research Intern at REVA University** (May 2024 - Oct 2024) - 6 months: I conducted research in drug discovery, focusing on QSAR analysis, molecular docking, and molecular dynamics simulations. I also worked on phylogenetic analysis using MEGA 11 and learned various bioinformatics and Immunoinformatics concepts. Additionally, I helped draft and refine research papers and conducted literature reviews to support our findings and improve the quality of our research.

- **Research Assistant at REAL Foundation** (Oct 2023- March 2024) - 6 months: Worked on literature review, data collection, and analysis to develop a stress monitoring system using EEG and non-invasive techniques for benchmarking breathing and brainwave frequency.

EDUCATION

- **Integrated PhD:** pursuing at REVA University (November 2024 to as on date).
- **Title:** Mathematical modelling, Simulation & Fabrication of cost-effective conducting polymer/chalcogenides flexible thermoelectric devices.
- **Supervisors:** Dr Karthik Rajendra, Dr R S Upendra, Dr Ganesh Hegde (Mentor)
- **Sponsoring Agency:** Visvesvaraya Ph.D. Scheme for Electronics & IT (C2S Scheme Full-Time), Ministry of Electronics and Information Technology, Govt of India.
- **B. Tech in Bioelectronics** from REVA University, Bengaluru in 2024, (CGPA: **8.91**)
- **12th Grade** from Kalpataru PU College, Tiptur in 2020, (**71.33%**)
- **10th Grade** from Morarji Desai Residential School, Doddenahalli in *2018,* (**82.40%**).

RESERCH PROJECTS CARRIED OUT

- **AI and ML for Drug Discovery (May 2024):** Applying AI and ML techniques to improve the drug development process and increase accuracy and efficiency in pharmaceutical research. (Python, ML, FLASK, HTML, CSS, JavaScript)
  Outcome: 01 review paper in "Taylor & Francis", and 01 Research paper to be communicated to "Journal of Computer-Aided Molecular Design" (Springer Nature).

- **Heart Disease Prediction Using ML (August 2022)**
  Developed an ensemble model combining Artificial Neural Network (ANN) and Support Vector Machine (SVM) to predict heart disease using parameters like age, sex, chest pain, resting blood pressure, and serum cholesterol. *(Technologies: Python, Machine Learning)*
  Outcome: Developed a Machine Learning model.

- **Optical Lactometer** (June 2021)
  Developed an optical lactometer to measure the purity of milk using Raspberry Pi and micro-sensors.
  Outcome: A design patent (Design NO: 345451-001, IPO-125353).

Courses/Certifications

- **"Biosensors and Bioelectronics System"** Online Course Organised by CDAC Kolkata (27 Jan 2025 to 13 March 2025).
- **"COMSOL Multiphysics for Electronic Engineers"** Course (January 2025)
- "**Python for Data Science, AI & Development**" Course (March 2021)
- "**Databases and SQL for Data Science with Python**" Course (February 2022)
- "**Introduction to the Internet of Things and Embedded Systems**" Course (June 2022)

Workshops/Trainings

- **Semiconductor Insights from Design to Packaging: Challenges and Opportunities.** hands-on workshop on COMSOL Multiphysics simulation organised by the Department of Physics, REVA University.
- **"Theory and Technology of Silicon Solar Cells"** Organised by Department of Electrical Engineering and NCPRE, IIT Bombay (28 May 2025 – 30 May 2025)
- **Five-Days Workshop on "Material Characterization and Computational Physics"** organised by the Department of Physics, REVA University.(05 March -11 March 2025)
- Underwent a hands-on training on February 17-20, 2025, on the **fabrication of Flexible TEG using screen printing techniques**) at Manipal Institute of Technology. In this training, I have gained experience in Thermoelectric ink preparation, fabrication and characterization of flexible thermoelectric devices.
- **8th INUP-i2i Hands-on Training on Nanofabrication and Characterization Techniques for North-East Region & Collaborating Institutes (offline),** organized by Indian Nanoelectronics Users' Programme - Idea to Innovation (INUP-i2i) at IISc Bengaluru (20-29 January 2025)
- **18th User Awareness Workshop (Virtual) on Device Fabrication and Characterization**, organized by Indian Nanoelectronics Users' Programme - Idea to Innovation (INUP-i2i) at IIT Delhi (12-13 December 2024)
- **Semiconductor Manufacturing Skills – Training Workshop** by Electronic Industries Association of India-ELCINA at Indian Institute of Science (IISc), Bangalore. (5-6 December 2024)
- AICTE Training and Learning (ATAL) Academy Faculty Development Program on "**Synthetic Biology and Biomimetic Applications**" (January 2024).
- "**Java and Spring Boot**" Training by TNIF Foundation (February 2024)

Achievements

- Participated and presented papers in ETBS-2023, ICCICCT-2024, CSITSS-2023, CSITSS-2024 International Conferences
- Vice President of INCENTIA music club from 2023 to 2024
- Vice secretary of INCENTIA music club from 2022 to 2023

Memberships

- IEEE Student Member, IEEE Electron Devices Society Member (2024-2025)

LIST OF PUBLICATIONS

1. Upendra, R. S., Nagar, S. S., **Preetham, R. S**., Mathias, S., Muskan, H., & Ananya, R. (2023, May). **"Phylogenetic Study of Surface Glycoprotein (S1 Spike Protein) Sequence of SARS-CoV-2 Virus"**. In International Conference on Emergent Converging Technologies and Biomedical Systems (pp. 295-307). Singapore: Springer Nature Singapore.

2. **Preetham, R. S**., Nalband, A. H., Sachin, U., Chaithanya, V., & Ahmed, M. R. (2023,

November). **"Securing 5G-Enabled Internet of Medical Things in Healthcare: Vulnerabilities, Threats, and Architectural Framework"**. In 2023 7th International Conference on Computation System and Information Technology for Sustainable Solutions (CSITSS) (pp. 1-8). IEEE.

3. **Preetham, R. S**., Upendra, R. S., Nagar, S. S., Mathias, S., Muskan, H., & Ananya, R. (2024, April), **"Integration of Machine Learning with Computational Drug Discovery for Identifying Potential Inhibitors against Pathogens – A Case Study with HIV and E. coli."** In 2024 2nd international conference on challenges in information, communication, and computing technology (iccicct-2024).

4. M S Upamanyu, **Preetham R S**, R B Ravi Varma, I M Umesh, Raje Siddiraju Upendra, R Karthik, **"Machine Learning (IQ tree 2) Integrated Phylogenetic Assessment Studies of Avian Influenza Virus A (H5N1) Considering Polymerase Basic Protein 1 (PB-1) Sequences"**, 8th International Conference on Computational Systems and Information Technology for Sustainable Solutions (CSITSS-2024), RV College of Engineering, Bengaluru, 7th- 9th November 2024**.**

5. Dr Upendra Raje Siddiraju, Hari Prasad, Karun Chakki, **Preetham R S**, Varun P Kulkarni, Sanjay Nagar, Dr Karthik Rajendra (2025, March), "**Computational Identification of Novel Leukotriene A4 Hydrolase (LTA4H) Inhibitors as Therapeutic Candidates for Colorectal Cancer**", Journal of Integrated Science & Technology.

6. Upendra, R. S., Upamanyu, M. S. M., Nagar, S. S., **Shivalingappa, P. R**., Anjaneya, S., & Rajendra, K. (2025). **Computational and Experimental Discovery of Hemagglutinin-Targeting Agents from Populus szechuanica: Molecular Docking, Characterization, and Antiviral Potential**. *Biomedical and Pharmacology Journal*, *18*(2).

LIST OF PAPERS TO BE COMMUNICATED

1. **Preetham R S**, R S Upendra, Sanjay Shrinivas Nagar, R Karthik, "**Machine Learning-Driven Drug Discovery: Targeting CCR5 Co-Receptors with Molecular Docking and Dynamic Analysis to Inhibit HIV-1 Infection**" to be communicated to "Journal of Computer-Aided Molecular Design" (Springer Nature)

PATENTS

- **Title of the patent: Optical Lactometer (Design Patent) (January 2021)**
  Inventor Names: Raje Siddiraju Upendra, Mohammed Riyaz Ahmed, Sayak Jana, **Preetham R S**, Kavana K. Rajani M R, Ranaveer Gaikwad (January 2023).
  The Patent Office Journal, 02, 4112,
  Design NO: 345451-001,
  Date of Issue: 13/01/2023 IPO-125353.

TECHNICAL SKILLS

- Programming Languages: Python, Bio-Perl, MySQL.
- Skills: Data Structures and Algorithms, DBMS.
- Frameworks: Flask.
- Operating systems: Linux (Ubuntu), Windows.

Software Tools (Research)

- COMSOL Multiphysics
- Origin
- Mendeley
- Canvas
- Latex (Overleaf)
- GROMACS
- PyMOL
- Mega 11
- Discovery Studio
- Auto Dock, Auto Dock Vina, Zdock, MTiOpenScreen

- Maestro
- Jupiter Notebook
- Visual studio code

SOFT SKILLS

- Communication
- Critical Thinking
- Problem Solving
- Quick Learner
- Presentation Skills

PERSONAL DETAILS

Name: Preetham R S
Date of Birth: 03.11.2002
Father's Name: Mr. Shivalingappa
Languages Known: English, Kannada, Hindi
Interests: Research, solving analytical puzzles, acquiring novel insights, singing, playing guitar and composing songs.
Nationality: Indian

DECLARATION

I hereby declare that the information furnished above is true to the best of my knowledge and I bear the responsibility for the correctness of the above-mentioned particulars.

Date: 12-08-2025

Place: Bengaluru **(Preetham R S)**