Ashrith Sagar Yedlapalli

+91 91080 96633 | ashrith.yedlapalli@gmail.com | LinkedIn | GitHub | Website | Bangalore, India

Education

Indian Institute of Science — Bangalore, India
M.Tech. in Robotics and Autonomous Systems — *July 2024 – Present*

Manipal Institute of Technology — Manipal, India
B.Tech. (Hons.) in Biomedical Engineering; ***GPA: 9.27/10 [3.873*/4.0]*** — *Oct 2020 – July 2024*
Minor Specialisation in Computational Mathematics — *Feb 2023 – Dec 2023*

Relevant coursework: Signals & Systems, Digital Signal Processing, Digital Image Processing, Analog & Digital Electronics, Digital System Design, Network Analysis, Biomedical Instrumentation-I,II; Clinical Sciences-I,II; Physiological Control Systems, Numerical Methods, Anatomy & Physiology, Tissue Engineering, Drug Delivery

Minor coursework: Computational Probability, Computational Linear Algebra, Design of Experiments, Applied Statistics, Time Series Analysis, Graph Theory

Honours coursework: Machine Learning, Deep Learning, Advanced Biomedical Signal Processing

Vedantha College — Bangalore, India
Pre-University; ***Class 12: 90%*** — *Mar 2020*

Subjects: Physics, Chemistry, Mathematics, Biology

Navkis Educational Centre — Bangalore, India
High School; CBSE Board ***Class 10: 92.4%*** — *Mar 2018*

Skills

Languages: C, Python, MATLAB, BASH, HTML/CSS, JavaScript

Technologies: Linux, Git, Keras, TensorFlow, PyTorch, OpenCV, Scikit-Learn, Node.js, Django, Flask, LaTeX, Manim

Projects & Research Experience

Imagined Speech Classification through EEG signals — MIT Manipal, India
Undergraduate Researcher — *Oct 2022 – Present*

- Currently performing classification of imagined speech EEG signals across various phoneme categories
- Application of Information Set Theory for improved feature extraction of EEG signals for Inner speech
- Advisor: Prof. Dr. Jeevan M. Thesis: In progress.

AMPifin — MIT Manipal, India
Software Head, Wiki & Web Dev Head, Dry Lab member — *Oct 2022*

- Participated in the International Genetically Engineered Machine (iGEM) 2022 Grand Jamboree
- Contributed to creating a software (GRASP) for Peptide Mutagenesis based on Alanine Scan | GitLab | GitHub
- Contributed to creating the project website hosted on GitLab Pages, based on Flask | GitLab
- One of the 90 among 350+ teams internationally that received the Impact Grant with a monetary value of $2,500
- Won the Gold Medal at the Grand Jamboree, along with the Best Food & Nutrition Project Track Award
- Nominated for 4 special prizes, including Best Software Tool, Best Education, Best Presentation, Best Wiki
- Won a silver medal at the Gogec Conference — Synthetic Biology Competition, for project AMPifin

IR-based Low-cost Portable Turbine Spirometer — MIT Manipal, India
Team member — *Oct 2022 – Jun 2023*

- Developed an affordable and portable spirometer using accessible materials.
- Participated and presented the paper titled "Portable Turbine Spirometer: Extending Lung Function Assessment", in the Second National Conference on Biomedical Instrumentation and Signal Processing (NABIOCON'23)
- Received the second best paper prize in the competition.

Use Of Virtual Reality In Mental Health: A Review Manipal, India

Team member *July 2023*

- Reviewed the potential of Extended Reality (XR), including Augmented Reality (AR), Virtual Reality (VR), and Mixed Reality (MR), in transforming mental healthcare.

Improvised Ryle's Tube for Naso-Gastric Placement Manipal, India

Team member *August 2023*

- Semi finalists in the AICTE Ministry of Education, India, Arm Education and STMicroelectronics "The Inventors Challenge - 2023"
- Proposed improvements to guided wire Ryle's tube by integrating a nano camera and pH sensor for precise insertion, reducing the risk of tissue rupturing, particularly beneficial for patients with weakness or critical conditions.

Development of a Robotic Arm for Upper Limb Amputees using Arduino Surathkal, India

Team member *July 2023*

- Developed a Robotic Arm prototype with an EMG v3.0 sensor interface for improved control and functionality, aiming to address limitations of traditional prosthetics for amputees.

e-Yantra Robotics Competition 2022-23 Manipal, India

Team member *Sep 2022 – Nov 2022*

- Qualified till Round-2 in the National Hackathon

Awards & Achievements

GATE BME AIR-7 Manipal, India

Secured All India Rank - 7 in the Graduate Aptitude Test in Engineering Entrance Exam *Feb 2024*

Secured All India Rank - 16 in GATE BME 2023

Diamond Scholarship award for Branch Topper Manipal, India

For 2nd year (2021-22), 3rd year (2022-23) *2021-23*

Personal Projects

frozen-flask-gh-pages

- A Flask project template which enables to host Frozen-Flask projects on GitHub Pages

wordle-cli

- Wordle game on the Terminal

Organizations

Manipal BioMachines *2021 – 2023*

Hardware & Software Head, Wiki & Web Dev Head, Dry Lab member, Advisor

IEEE EMBS Student Chapter Manipal *2022 – Present*

Treasurer (2022-23), Research & Projects Head: AI and Signal & Image Processing (2023-Present)

Biomedical Engineering Society of India (BMESI) — Manipal Chapter *2021 – 2022*

Member: Technical subsystem

Research Society Manipal (RSM) *2022 – 2023*

Member: Mathematics subsystem

Hobbies

Mathematics, Music, Rubik's Cubes, Chess, Philosophy