Anish Teja Bramhajosyula

Anish.Teja@iiitb.ac.in GitHub/AnishBramha LinkedIn Website +91 8919160172

Education

International Institute of Information Technology, Bangalore **August 2024 – July 2029**
Integrated Master/Dual Degree (BTech + MTech) in Computer Science and Engineering *CGPA: 3.73 / 4.0*

Projects

ParcelTrack | *Java, Springboot, MongoDB, HTML/CSS, React* | [**Link**] **November – December 2025**

- Created a Java Springboot application to automatically manage 100+ parcels per day at receptions.
- Integrated MS Auth for login and real-time QR ID verification for package pickup. Reduced manual lookup and verification time by $\sim 60\%$.
- The back-end utilises MongoDB for storage and scheduled Cronjob every 12 hours for periodic bulk package updates.
- Provides an interface for administrator to manage guards, and a front-end for guards to manage incoming and outgoing packages at the reception.

Granthomukhim | *Python, JSON* | [**Link**] **November 2025**

- Designed a context-free non-semantic word generator for a custom natural language (classified morphologically and phoentically as agglutinative–fusional, Indo-Aryan-Dravidian).
- Derivational grammar encoding 30+ grammar rules represented using the Chomsky Normal Form (CNF) via JSON and parsed to add appropriate inflections and affixes to account for 8 dimensions: person, number, case, gender, subject, object, tense and aspect/mood.
- Applies *sandhi* after generation, with over 95% accuracy according to a set of rules based on phonemic rules.
- Uses a system of atomic roots to form stems and add modifiers to form stems for parts of speech, with features such as reduplication and sound changes to account for nuanced semantic meaning, and subsequent affixes to produce function.

Cscript Interpreter | *C++, Python* | [**Link**] **October 2025 – Present**

- Implemented a tree-walk interpreter in C++ using a metaprogrammed visitor pattern method for a custom high–level, dynamic, interpreted, weakly–typed scripting language with a Lisp-1 global namespace system.
- Integrated an REPL for quick expression and statement evaluation. The interpreter can also run input script files. Achieved an output latency lower than 100 ms for small scripts.
- Implemented a bottom–up parser for the abstract syntaxt tree to correctly traverse the hierarchy of expressions, statements, expression–statements and blocks. This includes block scoping/shadowing and operator precedence.
- Desgined a custom superclass (`'object'`) using tagged unions as a cosmic container for primitive data types.

RDT & TCP Simulation | *C++, Python* | [**Link**] **April 2025**

- Designed a simulation for the following transmission and congestion control protocols: RDT 2.0, RDT 3.0, TCP Tahoe and TCP Reno, with real-time packet-losses, drops and error detection.
- Simulated packet losses and delays using multithreading – sleep for a threshold to trigger a scenario.
- Configurable probabilities of 50%, 10% and 30% for bit–flip payload corruption, acknowledgement sequence corruption and response corruption respectively.
- Error detection mechanism implemented with a checksum and checksum corruption mechanism simulated at random.

Technical Skills

Languages: C, C++, Python, MIT Scheme, Haskell, Java
Technologies/Frameworks: Numpy, Matplotlib, wxWidgets, Springboot
Tools and Miscellaneous: Vim, Jupyter Notebook, Zsh, Bash, Markdown, Make, Git

Relevant Coursework

- Data Structures
- Algorithms
- Linear Algebra
- C, C++, Python
- Calculus & ODEs
- Probability & Statistics
- Optimisation
- Signals & Systems

Achievements

Dean's Merit List Scholarship: Received a scholarship of ₹50,000 for academic performance during the year 2024-25.
JEE (Main): All India Rank 4616 (Open Category)

Leadership / Extracurricular

Pioneers Math Club **January 2025 – Present**
Core Member *IIIT-B*

- Organised 'Trapped in Tangents' – an escape room event for the 'Infin8' cultural fest with 150+ participants.
- Organised and participated in mathematics sessions on Real Analysis and Machine Learning.

Quiz Society **January 2025 – Present**
Core Member *IIIT-B*

- Organised 'Tech Trivia' – a quiz for the 'Synergy' tech fest with 100+ participants.
- Participated in external quizzes organised at PES Bangalore and IISc.