MAHARSHI BASU

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EDUCATION

Indian Institute of Information Technology December 2021 - May 2025
B.Tech Computer Science *Kalyani, West Bengal*

WORK EXPERIENCE

DeepSource (YC W20) February 2025 - present
Software Engineer Intern *Remote*

- Contributed to Globstar — an open-source static analysis toolkit by DeepSource
- Implemented **50+** vulnerability checkers, core features like issue skipping and built-in checker detection, and added a language-agnostic **call graph** interface with Go support
- Developed Python runtime support for **scope analysis** and **data-flow analysis**

RISC-V International June 2024 - September 2024
Intern *Remote*

- Selected as an **LFX'24 Mentee** for the Sailing Downstream II project
- Enhanced the **Sail language parser** to extract key AST features into JSON
- Improved CI/CD pipelines and formalized instruction format extraction

INRIA December 2023 - May 2024
Intern *Remote*

- Worked on the **Semantic Parser Language** in Coccinelle to extend it for C++ constructs
- Added support for **Qualified Access**, **Tuple Expressions**, **Trailing Qualifiers** and more

PROJECTS

Zinc Code
C++, Make

- Built a compiler to translate a simplified language into assembly for an 8-bit CPU, including code generation for the target architecture
- Designed and implemented a recursive descent parser to construct ASTs and handle language constructs

Trinity Code
Jupyter Notebook, Python

- Built a project for SIH1447 at Smart India Hackathon 2023 to identify Forward Error Correction schemes from unknown demodulated signals using an improved RNN model
- Generated a dataset of 1M+ samples by simulating noisy wireless channels with various FEC schemes

TECHNICAL SKILLS

Languages	Python, Go, C/C++, OCaml, Rust
Tools	Git, Docker, GNU Make, Bash, Unix, Vagrant
Domain interests	Compilers, Functional Programming, Developer Tooling, Systems, Security

ACCOMPLISHMENTS

Grand Finalist at **Smart India Hackathon 2023**. Our team worked on problem statement SIH1447 by the National Technical Research Organization for identifying and extracting FEC schemes from unknown demodulated signals