

---

# Dhruv Chawla

## Compiler Engineer

dhruv263.dc@gmail.com

+91 9910299843

<https://dc03.github.io>

Vellore, Tamil Nadu

---

A capable programmer learning compiler design and the LLVM compiler infrastructure. Experienced with interpreters, and familiar with systems and assembly programming. 4 years of C++ experience.

---

### Languages

- English - Fluent
  - Hindi - Intermediate
- 

### Skills

- |       |          |                |         |        |
|-------|----------|----------------|---------|--------|
| • C++ | • Python | • Compilers    | • Linux | • LLVM |
| • C   | • Rust   | • Interpreters | • Git   |        |
- 

### Experience

- **The LLVM Compiler Infrastructure**

January 2023 - Present

*Examples of Patches Contributed*

- [clang][alias|ifunc]: Add a diagnostic for mangled names  
<https://reviews.llvm.org/D143803>
- [NFC][TLI] Replace std::lower\_bound call in getLibFunc with DenseMap lookup  
<https://reviews.llvm.org/D157951>
- [NFC][ValueTracking]: Remove redundant computeKnownBits call for LoadInst in isKnown-NonZero  
<https://reviews.llvm.org/D155958>
- [InstCombine] Fold icmps comparing uadd\_sat with a constant  
<https://reviews.llvm.org/D154565>
- [SetVector] Improve performance for small sizes  
<https://reviews.llvm.org/D152497>

- **Google Summer of Code Contributor (The ENIGMA Team)**

June 13, 2022 - September 12, 2022

*Project name: Data Buffers / Serialization*

- Worked on rewriting most of the frontend of the ENIGMA Development Language compiler, a scripting language based on GML
  - Rewrote most of the Binary Buffer system which deals with storing and reading data from byte streams
  - Made a serialization and deserialization system which uses template metaprogramming for static polymorphism
  - <https://summerofcode.withgoogle.com/programs/2022/projects/BrXiUNA2>
-

---

## Education

- **B.Tech in Information Technology** *VIT, Vellore | 2020 - 2024*  
Current CGPA: 9.28
  - **XIIth Grade (Senior Secondary), CBSE** *Navy Children School, Mumbai | 2020*  
Percentage: 96.4%
  - **Xth Grade (Secondary), CBSE** *Navy Children School, Mumbai | 2018*  
Percentage: 93.6%
- 

## Projects

- **nyx** <https://github.com/dc03/nyx> | *September 2020*
    - A simple, interpreted language implemented in C++
    - Features classes with constructors and destructors, lists, tuples
    - Static type system
    - Copy, reference and move semantics
    - Bytecode virtual machine
    - Code formatter, bytecode dumper, VM execution tracing
  - **rispy** <https://github.com/dc03/rispy> | *February 2022*
    - Interpreter for a lispy-inspired lisp
    - Implemented in Rust
    - Tree-walk interpreter
    - Testing for lexical analyzer and parser
  - **tictactoe-arduino** <https://github.com/dc03/tictactoe-arduino> | *February 2023*
    - Tic-tac-toe implemented on an Arduino Uno
    - Multiplexing of outputs (LEDs) and inputs (buttons) to reduce pin usage
    - Compact layout of game state to reduce memory usage
    - Part of a university course project
- 

## Certifications

- **Introduction to Haskell Programming (NPTEL)** *Issued Sep 2022*  
Percentage: 85% Credential ID NPTEL22CS69S2318078809012045
  - **Compiler Design (NPTEL)** *Issued Apr 2022*  
Percentage: 90% Credential ID NPTEL22CS14S2446142802071248
  - **Design and Analysis of Algorithms (NPTEL)** *Issued Oct 2021*  
Percentage: 85% Credential ID NPTEL21CS68S4332059403122958
-