G. Aswin

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EXPERIENCE

Indian Institute of Technology, Guwahati | *Research Intern (under Prof. Gaurav Trivedi)*   *May 2022 – Present*
  – Explored the internals of code-generation in GCC compiler.
  – Adding new instructions to the GCC backend for the RISC-V platform and using QEMU to emulate a RISC-32 processor.

AirProbe (Dronebase.com) | *Software Development Intern (Backend)*   *Mar 2022 – May 2022*
  – Facilitated a complete overhaul of the testing architecture by removing the need of populating database assets, resulting in a significant performance boost while running tests for applications.
  – Wrote PyTests for various existing routes with the help of Postman and fixed bugs.
  – Organized, cleaned and analysed application data consisting of multiple large data files, using Pandas.

EDUCATION

RNS Institute of Technology, Bangalore   Aug 2019 – Jun 2023
B.E. in Computer Science and Engineering   *CGPA: 9.08*

Kendriya Vidyalaya No. 2 Salt Lake, Kolkata   Apr 2018 – Mar 2019
Senior Secondary, CBSE   *Marks: 91.2 %*

PROJECTS

I-Did-This-Today | *A web application built using Flask* ⬈   *Flask, HTML, CSS, JS, Bootstrap, PostgreSQL, Heroku*
  – Used Flask and PostgreSQL on the backend, and frontend design made from scratch using HTML, CSS, JS & Bootstrap.
  – The app uses Google OAuth authentication, and is deployed in Heroku (i-did-this-today.herokuapp.com).

LanJudge | *An online judge for evaluating programs* ⬈   *GoLang, C, Unix System Calls*
  – Users submit their code and select a language, and LanJudge executes that code for test inputs and prints the output.
  – Code execution engine is written in C, with UNIX API functions used to create and run user input programs as processes.

Bored | *A native Android application* ⬈   *Android, Java, SQLite, Material UI*
  – My final project for Harvard's CS50x course, an app that suggests us fun/productive activities to do when bored.
  – Internally uses an SQLite database and API calls to BoredAPI. The UI/UX follows Google's Material Design guidelines.

Xv6 Operating System | *Summer Bootcamp project at CSERL, IIT Bombay (ongoing)*   *Xv6 OS, Unix*
  – Adding user programs and making system calls in Xv6 OS.
  – Implementing core OS fuctionalities in Xv6, including memory management and process synchronisation.

Simulating a Deterministic Finite Automata in ARM7 Machine Code ⬈   *ARM, Keil UVision4*
  – Software simulation of any Deterministic Finite Machine using ARM programming to simulate the machine's output.
  – Instructions written in ARM assembly language for ARM7 (Big Endian) architecture in Keil UVision4 IDE.

Friend Recommendation Algorithm ⬈
  – A menu driven program written in C which uses concepts of graph theory, file handling and graph algorithms.

"Data Warehousing: The seed of data science" | *A survey paper* ⬈
  – Studied data warehousing and how they have evolved by analysing the patterns and trends from 10 sources.

RELEVANT COURSEWORK

NPTEL Certification: Design and Engineering of Computer Systems (A course on Distributed Computing by IIT Bombay) ⬈
B.Tech Courses: Data Structures, Algorithms, Databases, Computer Organization, Operating Systems, Compilers, Networking

TECHNICAL SKILLS

Languages: Python, Go, C, C++, Bash, Java, SQL, HTML, CSS
Technologies / Frameworks: Git, Flask, Android, Selenium, PostgreSQL, SQLite, ARM, Heroku, Chart.js, Postman, GCC

ACHIEVEMENTS / EXTRACURRICULAR

  – Conducted and co-presented workshops on GitHub for juniors as part of a student club (BigO) ⬈
  – *3rd Position* out of 300+ participants in State Level (Karnataka) C programming contest ⬈
  – *Placed 2nd* out of 200+ participants in Codeflix hosted by Google Developer Students Club RNSIT ⬈
  – Facilitated & co-authored on problems for college-level programming contests (Google Developer Students Club RNSIT)