Abhay Shukralia

Bachelor of Technology
in Computer Science and Engineering
Indian Institute of Technology, Ropar

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Education

Degree	Institute/Board	CGPA/Percentage	Year
Bachelor of Technology	Indian Institute of Technology, Ropar	7.35 (Till 4th Sem)	2021-2022
Senior Secondary	Central Board of Secondary Education	91.2%	2019
Secondary	Central Board of Secondary Education	10(CGPA)	2017

Projects

- **Utility Based Cache Partitioning on Champsim [Group Project]**
  Computer Architecture (CS204) **Github**
  - Utility-based cache partitioning (UCP) is a low-overhead, runtime mechanism that partitions a shared cache between multiple applications depending on the reduction in cache misses that each application is likely to obtain for a given amount of cache resources
  - The proposed mechanism monitors each application at runtime using a novel, cost-effective, hardware circuit. The information collected by the monitoring circuits is used by a partitioning algorithm to decide the amount of cache resources allocated to each application.
  - The UCP research paper claims that it can improves performance of a dual-core system by up to 23% and on average 11% over LRU-based cache partitioning.
- **Huffman Encoding Algorithm [Group Project]**
  Data Structures And Algorithm (CS201) **Github**
  - It is a lossless data compression algorithm that we implemented using the knowledge of data structures and algorithms (like linked list, trees,min-max heap ..etc). Using this algorithm we have shown we can reduce the size of text files to a great extent.
- **Vending Machine in Verilog [Group Project]**
  Digital Logic and Design (CS203) **Github**
  - It is an automated machine that provides items to consumers after cash payments are inserted into the machine. We implemented the code of this in Verilog (Assembly language) in our DIGITAL LOGIC AND DESIGN course(CS203).
- **Compiler Design using Flex /Bison**
  Programming Paradigms and Pragmatics (CS202) **Github**
  - CUCU (A Compiler U Can Understand) is a simple compiler for a short subset of a language. As writing a compiler for the whole ANSI C standards is very difficult, so we implemented CUCU for very small subset of the C language.
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Technical Skills

- **Programming Languages**: C/C++, Java, Python,Verilog -HDL , Perl, SQL,
- **Competitive Coding**:
- **web development** :
- **Data Science**:

Key courses taken

- **CSE** : Data Structures & Algorithm(CS201) , Computer Architecture (CS204), Programming Paradigms and Pragmatics(CS202) Digital Logic and Design(CS203), Discrete Mathematics(CS101)
- **Maths**: Probability and Statistics(MA202), Advanced Calculus and Linear Algebra(MA102)
- **Others**: Signal and Systems (EE201), Tinkering Lab(GE107), Economics(HS201)

Positions of Responsibility

- **Sponsorship Team Member**,Contacted many companies for Sponsorship of college fest
- **Event Management Member**,
- **JEE Mentor**,

Miscellaneous

- **JEE - ADVANCE 2020 (AIR 4217)** ,
- **JEE MAINS 2020 (Among 1%)**,
- **Selected in merit cum means Scholarship offered by IIT Ropar**,
- **Selected for Engage 2022 Challenge 2** ,
- **CodeChef -1614 (max rating, 3 Star)**,