SHAILENDRA DOHRE

Senior Year Undergraduate ◇ Computer Science and Engineering
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Education

Year	Degree/Certificate	Institute/School	CGPA/%
2018 - Present	B.Tech(CSE)	Indian Institute of Technology, Kanpur	6.63/10
2018	CBSE(XII)	India International Public School, Dabra, Gwalior(MP)	80.4%
2016	CBSE(X)	India International Public School, Dabra, Gwalior(MP)	9.2/10

Projects

- **C Compiler** | *Mentor: Prof. Amey Karkare, CSE, IIT Kanpur* | *Compiler Design* *Feb 2021-May 2021*
  - Implemented a compiler with source code **C**, Implementation language **C++** and Target language x86 Assembly
  - Used **Lex** to implement **lexer** to tokenize the input and **YACC** to implement **parser** to correct grammatical rules
  - Produced **abstract syntax tree** in **dot** script and used **3 Address Code** as an **intermediate language**
  - Incorporated support for errors and warnings generation for syntactically and semantically erroneous programs
- **Building GemOS** | *Mentor: Prof. Debadatta Mishra, CSE, IIT Kanpur* | *Operating System* *Aug 2020 - Nov 2020*
  - Implemented various operating system elements on gemOS such as **Paging**, **File system** and **Message Queues**
  - Developed **debugging system** for gemOS that could stop the execution of a process at a particular location
  - Extended various functionalities of GemOS: implemented multilevel page tables with lazy page allocation scheme
  - Engineered memory management operations with provisions for **mmap**, **munmap** and **huge page** creation
- **Regions Package** | *Mentor: Prof. Amey Karkare, CSE, IIT Kanpur* | *Software Dev. and Ops. Feb 2020-April 2020*
  - Applied **OOPS** concepts to determine the position of a point as inside or outside the regions of complex shapes
  - Supported operations like translate, rotate and used **inheritance** to implement intersection, union between shapes
- **Design and Fabrication: Balsa** | *Aeromodelling Club, IIT Kanpur* *May 2019 - July 2019*
  - Worked in a team of 5 to design and fabricate an **rc-biplane** using Balsa wood primarily that can fly
  - Fabricate various parts of a biplane model - wings, vertical stabilizers, horizontal stabilizers, fuselage and nose
  - Simulated and analysed airplane designs with varying dimensions and airfoil designs and learnt the feasibility of aircraft by studying the parameters graph in XFLR 5 software.
- **Dive Deep into Competitive Programming** | *ACA, IIT Kanpur* *Jan 2019 - April 2019*
  - Learnt various algorithmic techniques including **graph theory**, **string matching** and **dynamic programming**
  - Studied and implemented STL that provides common programming data structures and functions

Technical Skills

- **Programming Languages** C/C++, Python, Bash Script, HTML, CSS
- **Software and Tools** SQLite, MongoDB, Lex, Yacc, LaTex, Docker, AutoCAD, XFLR 5

Achievements

- Secured **All India Rank 3909** in Joint Entrance Examination(JEE Advance) among 2,00,000 candidates 2018
- Secured **All India Rank 8683** in Joint Entrance Examination(JEE Mains) among 1.5 million candidates 2018

Relevant Courses

**** - Ongoing courses***

Data Structure and Algorithm	Operating System	Introduction to Mathematical Logic
Fundamental of Computing	Introduction to Machine Learning	Principles of Data Base Systems
Compiler Design	Computer Organization	Software Development and Operations
Linear Algebra and ODEs	Discrete Mathematics	Advanced Algorithms
Theory of Computation	Introduction to Electronics	Principles of Programming Languages*

Extra-Curricular

- Worked in the team of **Techkriti Open School Championship** (TOSC) and managed and conducted an exam in the district Gwalior(MP) of 200+ students