Nayan Deshmukh

3rd year Undergraduate Student

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ACADEMIC DETAILS

Year	Program/Board	Institute	CGPA/%
2014-present	B.Tech, Computer Science and Engineering	Indian Institute Of Technology, Kanpur	9.2/10.0
2014	All India Senior School Certificate Examination	Vidhya Mandir Sr. Sec. School, Kota	93.2%
2012	All India Secondary School Examination	St. Jude's Hr. Sec. School, Khargone	10.0/10.0

SCHOLASTIC ACHIEVEMENTS

- Received the **Academic Excellence Award** for exceptional academic performance in 2014-15 academic session
- Secured 1^{st} position among 25 teams in Electromania, Techkriti15 (Annual Technical Festival of IIT Kanpur)
- Secured 3^{rd} position in FPGA Design Challenge, Techkriti16 (Annual Technical Festival of IIT Kanpur)
- Secured **All India Rank-184** among 150,000 students in JEE Advanced 2014
- International Mathematics Olympiad 2012 (SOF) : Secured **State Rank-3** in Madhya Pradesh
- National Science Olympiad 2012 (SOF) : Secured **State Rank-14** in Madhya Pradesh

WORK EXPERIENCE

- **Xorg(Mesa): Implement features in Gallium3D interface** [Code]
  Open Source Project under Christian König (Senior Developer, AMD) Jun'16 - Present
  - Implemented luma keying as part of color space conversion code and bicubic and lanczos interpolation algorithms as fragment shaders in TGSI
  - Reworked the VPDAU mixer implementation so that it uses temporary buffer while applying filters
  - Implemented DRI3 for the Gallium interface for hardware with PRIME GPU offloading

- **Edge-disjoint spanning trees in undirected graphs** [Report]
  Internship under Dr. Ovidiu Daescu (Professor, The University of Texas at Dallas) at IIT Kanpur May'16 - Jul'16
  - Worked on finding 2 edge-disjoint spanning trees in a special class of graphs with 2n-2 edges and a double edge
  - Proved a lemma regarding allocation of edges of 2,3 and 4 degree vertex
  - Conceptualized an algorithm to construct the two trees using the lemma

PROJECTS

- **ZIZO101: Social Robot**
  Electronics Club Project May'15 - June'15
  - Developed an animatronics head capable of human interaction via speech and through its Twitter handle
  - Used Radxa Rock as the main development board along with Arduino Mega for controlling servos and Python as the primary language
  - Implemented Speech to text using Googles speech API, Artificial Intelligence through Pandorabots API, text to audio using eSpeak and connected to Twitter using TweetPony API

- **Android Library** [Github]
  Independent Project Jan'15 - April'15
  - Developed an Library for Android which collects data on time spent by user on each app
  - Explored various ways to calculate the time spent by user on each ways and implemented the most efficient one
  - Developed a background service which would run at specific intervals and record the application which was running in foreground at that time and store it in SQL database

- **Stable Marriage Problem** [Report]
  Course Project under Dr. Rajat Mittal(Assistant Professor, IIT Kanpur) Oct'15 - Nov'15
  - Studied the Stable Marriage Problem and Analysed the proof of the algorithm to solve it
  - Studied various standard techniques used in solving the problem and its variants

TECHNICAL SKILLS

- Programming Language: C, Python, JavaScript, PHP.
- Libraries and Tools: Git, Bash, Vim, Processing, LaTeX, GDB, GNUplot, Docker, Make
- Development Platforms: Atmel AVR, Arduino.

RELEVANT COURSES

Operating Systems*	Theory of Computation*	Design and Analysis of Algorithms*
Data Structures and Algorithms	Computer Organization	Introduction to Programming
Discrete Mathematics	Logic in Computer Science	Tools for Computing

* Ongoing Courses