**KISHEN N GOWDA**
**Discipline of Computer Science and Engineering**
**Indian Institute of Technology Gandhinagar**

Third Year Undergraduate
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## Education

| Examination | University | Institute | Year | CPI/% |
|---|---|---|---|---|
| Graduation | IIT Gandhinagar | IIT Gandhinagar | 2017- present | 9.52 |
| Intermediate/+2 | Telangana State Board of Intermediate Education | Sri Chaitanya Junior Kalasala | 2017 | 97.5 |
| Class X | Telangana State Board of Secondary Education | St. Patricks High School | 2015 | 10 |

## Internships

2D Strip Packing Problem (Approximation Algorithms) - Narendra Summer Internship Program, CSA, IISc — May - July 2019

Faculty Mentor: Dr. Arindam Khan, IISc

- Studied the 2D Strip Packing Problem, a geometric packing based classical problem. Aim was to develop an *efficient* algorithm with approximation ratio *less than 2*.
- Analyzed Steinberg's algorithm and Schiermeyer's algorithm (both $2$ approximation algorithms) and identified the problem cases, i.e, cases when these two algorithms attain *2OPT*.
- Designed strategies as well as modified Steinberg's algorithm and proved that in most cases our algorithm has an approximation ratio less than $2$. Our algorithm has a time complexity of $O(n^2)$, but can be implemented more efficiently.
- Currently working on the analysis and developing more strategies for solving particular cases which require improvement.

Home Automation (IoT) - SSTP '18, IIT Gandhinagar — May - July 2018

Faculty Mentor: Dr. Neeldhara Misra, IIT Gandhinagar

- Designed a compact and convenient Home Automation System with an inclusive design and voice control.
- Developed a Dashboard application (Django), worked on building the system and designing circuits.

## Key Projects

Dynamic Display Service — Jan 2019

HackRush, IIT Gandhinagar — Hackathon

- Developed a Dynamic Display Service for efficient display of various events on screens present at different locations.
- Created a Web App on Webslides JS with Django as backend. Used Airtable API to fetch data of events.

Synchronous FSM Verilog Code Generator — Oct-Nov 2018

Dr. Joycee Mekie (Course Project) — Digital Systems

- Created a Synchronous FSM Verilog code generator. Generates verilog code, test bench and constraints files and implements the program in the FPGA, if connected.
- Used lark-parser to parse required data from the file, created standard templates and rendered them using jinja2. Used Django as backend and *tcl console* of Xilinx Vivado for implementation.

Simulating Brownian Motion based on unpredictability in the Quantum Realm — Oct-Nov 2018

Prof. Krishna Kanti Dey (Course Project) — Physics Lab

- Used the phenomenon of Quantum Tunnelling and designed a emitter reverse biased transistor circuit for generating random output. Unbiased the output by using Von Neumann decorrelation. Verified the randomness of output using bytewise arithmetic mean, chi squared test and monte carlo pi test. Simulated a Wiener process using the random bits generated as displacement.

Other Projects

- **Equilibrium Temperature Distribution in Objects** (Mathematics II - Course Project) Simulated the approximate temperature distribution of a body at equilibrium, given boundary conditions.
- **Technical Council Website Developer**, IIT Gandhinagar.

## Academic Achievements

- Recipient of *Dean's List : 2017-18 Sem I, Sem II, 2018-19 Sem III, Sem IV*, awarded by IIT Gandhinagar
- Recipient of *Excellence in Academics*, awarded by St. Patricks High School: 2015
- Recipient of *Academic Topper*, awarded by St. Patricks High School : 2013, 2014 and 2015

## Skill Summary

| | |
|---|---|
| **Programming Languages**: | proficient in Python, C++ and C. |
| **Software Skills**: | LaTeX, Git, Xilinx Vivado (Verilog), GDB, Autodesk Inventor. |
| **Development**: | HTML, CSS, Bootstrap, JavaScript, Django. |
| **Languages**: | English, Hindi, Kannada, Telugu. |

## Positions of Responsibility

- Codechef Campus Chapter Representative, GRASP - Group for Algorithms and Sport Programming, IIT Gandhinagar.
- Event Organiser and Problem setter of D'code, the competitive programming contest in Amalthea'18, Technical Summit, IIT Gandhinagar.
- Problem Setter of CodeRush, the competitive programming contest in Ignite'19, Technical Fest, IIT Gandhinagar.
- Problem Setter, Organiser and Web Developer, HackRush'19, Annual Intra College Hackathon.

## Key Courses Undertaken

| | |
|---|---|
| **Computer Science**: | Computing (Python), Digital Systems, DSA I + Lab, DSA II, Discrete Mathematics, Computer Organization and Architecture, Operating Systems*, Theory of Computation*, Natural Language Processing*, Computational Physics* |
| **Mathematics**: | Real and Complex Analysis, Vector Calculus, Linear Algebra, Differential Equations, Probability and Statistics, Numerical Methods |

* to be completed by December 2019

## Extra-Curricular Activities

- Competitive Programming - Active on Codechef, Codeforces. Check out my StopStalk account.
- Attended Google Tech Inter Connect 2018 at Google, Hyderabad.
- Organized workshops on Competitive Programming, Web development and Web Scraping.

Personal Website LinkedIn