

Rohan Patil | IIT Gandhinagar

Gandhinagar - Gujarat - India

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Education

Indian Institute of Technology Gandhinagar

B. TECH SENIOR UNDERGRADUATE, COMPUTER SCIENCE AND ENGINEERING, CPI 9.48

Gandhinagar

2017 - 2021

Deogiri College

HSC, MAHARASHTRA STATE BOARD, 88.31%

Aurangabad

2017

Holy Cross English High School

SSC, MAHARASHTRA STATE BOARD, 93.60%

Aurangabad

2015

Internships & Research Projects

Gravitational Wave Detection

IIT Gandhinagar

UNDER GUIDANCE OF PROF. ANIRBAN DASGUPTA AND ASSOC. PROF. ANAND SENGUPTA

2018-2020

- Worked on gravitational wave detection and understood the challenges associated with curved parameter space and non-metric distances
- Along with various random approximate search methods like LSH, explored various filtering techniques as GW have comparatively very low SNR
- The theoretical reduction in time complexity using approximate random searches opens the possibility of near real time analysis

Gryt India Pvt Ltd

Pune (WFH)

POSITION: SOFTWARE ENGINEERING INTERN

May-Oct. 2020

- Designed part of API backend for exercise management system for trainers and developed a exercise step detection algorithm for videos
- Deployed Sagemaker solutions on AWS for rapid experimentation and development of the core motion detection model

Summer Research Internship Programme

IIT Gandhinagar

UNDER GUIDANCE OF ASSOC. PROF. BIRESWAR DAS

May-July 2019

- Learned about factorization of polynomials in finite fields and focused on developing algorithms for specific finite rings
- Studied various NP Hard problems trying to prove the hardness of factorization over finite rings
- Proved that the problem of factoring a polynomial in two polynomials in rings belongs to class NP

Publications

- EdgeNILM: Towards NILM on Edge devices
BuildSys 2020 - Core A Ranked Conference (Accepted) 2020
- Assessing the Interplay between travel patterns and SARS-CoV-2 outbreak in realistic urban setting
Applied Network Science (Under Review) 2020

Academic Achievements & Awards

- Selected for Summer Undergraduate Research Fellowships (SURF) of Caltech
Cancelled due to COVID-19 Pandemic 2020
- Appeared on the **Dean's List** all semesters
Semester I and II of AY 2017-18, 2018-19 and Semester I of AY 2019-2020 2017-2020
- Awarded A+ grade in Mathematics I : Calculus and Theory of Computation for exceptional performance
- **All India Rank 2710** in JEE Advanced among **2.2 lakh candidates** 2017
- **All India Rank 5788** in JEE Mains among **15 lakh candidates** 2017
- All India Rank 573 in Kishore Vaigyanik Protsahan Yojana (KVPPY), SA stream 2015
- *Selected and Attended National Science (VIJYOSHI) Camp 2016, IISC, Bengaluru* 2016
- Awarded **Maharashtra Talent Search Examination** (MTSE) scholarship for three years 2013 - 2015
- Received Merit Certificate at **Dr. Homi Bhabha Bal Vaidnyanik Competition.** 2014
- Awarded Middle School State Merit scholarship Rank 14 by **MSCE, Pune** 2012

Skills

Programming Python, C, LaTeX, Verilog, Rust, Go

Web Development Django with Python, CSS, HTML5, JavaScript

Projects & Presentations

- Short Survey on Development of Data Driven Techniques in Online Advertising June 2020
 - Surveyed user profile creation, audience segmentation and realtime bidding for Online Advertising in a team of three
 - Noted the public datasets, privacy concerns and learned about the hardness of making optimal user profile
 - Course Project for CS328 (Introduction to Data Science - Prof. Anirban Dasgupta)

- **Toy Go Compiler** (*C, Flex, Bison*) June 2020
 - Developed in a team of three a Go compiler
 - Created single pass compiler with register optimization and quick compilation
 - Course Project for CS327 (Compilers - Assoc. Prof. Bireswar Das)
- **Covid19 Dashboard** (*Python, Django*) *covid19.iitgn.ac.in* May 2020
 - Developed and deployed COVID-19 dashboard for Ahmedabad with Asst. Prof. Udit Bhatia and team
 - Worked on road network calculation parallelization and code optimization
 - Designed and deployed the Dashboard UI
- **HackRush IITGN Hackathon** Feb. 2020
 - In a team of three, attempted the Machine Learning and Pentesting related problems
 - Developed ML model for predicting appliance electricity consumption and did pentesting on provided VMs
 - The team secured first and second position in pentesting and ML challenge respectively
- **Semantically Sensible Thesaurus** (*NLP, Python*) Nov. 2019
 - Designed a word suggester which preserves the meaning of the sentence.
 - Developed a classical model for word suggestion with online learning support.
 - Course Project for CS613 (Natural Language Processing - Asst. Prof. Mayank Singh)
- **Rushell - Rust UNIX Shell** (*Rust*) Nov. 2019
 - In a team of five, created a UNIX shell in Rust.
 - Created in-built binaries for the shell.
 - Course Project for CS301 (Operating Systems - Asst. Prof. Nipun Batra)
- **Email Parser** (*Python, Stanford NLP API, Gmail API*) Jan. 2019
 - Tackled the Email Parsing problem in Hackathon at IIT Gandhinagar with four others
 - Extracted details of seminars, talks and workshops using NLP
 - Presented a live demo of the same
- **Spell Check** (*Python*) Dec. 2018
 - Attempted to use basic parameters like difference in absolute length to predict the correct spelling
 - Determined the weight of each parameter and its powers using stochastic gradient descent
- **Pattern Matching using FPGA** (*Verilog*) Nov. 2018
 - Objective was to find the number of overlapping occurrences with given pattern and text.
 - Project was done using Vivado and implemented on Basys3 board with a team of three others
 - Course Project for ES203 (Digital Systems - Asst. Prof. Joycee Mekie)
- **Wi-fi Security** Apr. 2018
 - Attempted the Wi-fi security question in the Hackathon conducted at IIT Gandhinagar
 - Objective was to find security issues on the provided Wifi network
 - Discovered that network switch was vulnerable to CRSW insecure default IOS configuration
- **Wikisrape** (*Python*) Nov. 2017
 - Objective was to scrape data from a given Wikipedia link
 - Used BeautifulSoup4 library for parsing HTML
 - Course Project for ES112 (Computing - Asst. Prof. Neeldhara Misra)
- **Question Paper Generator** (*Python*) Nov. 2017
 - Authored a script to retrieve question data from airtable and create a question paper with user input conditions in LaTeX typesetting.
 - Used the airtable API to retrieve the data and created a system get a random question set following the given constraints, and then output a question paper.
 - Course Project for ES112 (Computing - Asst. Prof. Neeldhara Misra)
- **Automail** (*Python*) Jul. 2017
 - Created an automatic mailing script which use token separated files
 - Utilized raw SMTP for sending e-mails

Extracurricular & POR

- **Teaching Assistant** for CS301 - Operating Systems Fall 2020
- Volunteered for organization of **ACM-India Annual Event** Feb. 2020
- Member of the **Conclave and Symposium** team of **Amalthea** (IIT Gandhinagar's Tech. Summit) for two years 2017 - 2018
- Part of school **Table Tennis** team and **Runner** at District Level inter-school competition for 3 years 2011 - 2013
- Enjoy playing chess