

Rohan Patil

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EDUCATION

University of California San Diego
M.S. Computer Science Student

California, USA
Presently Pursuing

Indian Institute of Technology Gandhinagar
B. Tech, Computer Science and Engineering, CPI 9.55/10
Institute Silver Medal

Gandhinagar, India
2017 - 2021

INTERNSHIPS & RESEARCH PROJECTS

Gravitational Wave Detection

IIT Gandhinagar

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

2018-2020

- Worked on gravitational wave detection. Understood the challenges of curved parameter space and non-metric distances
- Along with random approximate search methods, explored filtering techniques as GW have comparatively low SNR
- Theoretical reduction in time complexity using approximate random search 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
- Developed a exercise step detection algorithm for videos and pose detection
- Deployed Sagemaker solutions on AWS for rapid experimentation and development of the core pose detection model

Summer Research Internship Programme

IIT Gandhinagar

UNDER GUIDANCE OF 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 & POSTERS

- Janvi Thakkar, Devvrat Joshi, Shril Mody, Siddharth Soni, **Rohan Patil**, Nipun Batra

Geometrical Homogeneous Clustering for Image Data Reduction

ICML 2021 SubsetML Workshop - Poster Presentation

2021

- **Rohan Patil**, Raviraj Dave, Harsh Patel, Viraj M Shah, Deep Chakrabarti, Udit Bhatia

Assessing the Interplay between travel patterns and SARS-CoV-2 outbreak in realistic urban setting

Applied Network Science

2021

- Rithwik Kukunuri, Anup Aglawe, Jainish Chauhan, Kratika Bhagtani, **Rohan Patil**, Sumit Walia, Nipun Batra

EdgeNILM: Towards NILM on Edge devices

BuildSys 2020 - **Core A Ranked Conference**

2020

ACADEMIC ACHIEVEMENTS & AWARDS

- Selected for Summer Undergraduate Research Fellowships (**SURF**) at California Institute of Technology

Cancelled due to COVID-19 Pandemic

2020

- Appeared on the **Dean's List** for academic excellence

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 **1.5 million aspirants**

2017

- All India Rank 573 in Kishore Vaigyanik Protsahan Yojana (**KVPY**), SA stream

2015

Selected and Attended National Science (VIJYOSHI) Camp 2016, IISC, Bangalore

2016

SKILLS

PROGRAMMING Python, C, \LaTeX , Verilog, Rust, Go
WEB DEVELOPMENT Django, CSS, HTML5, JavaScript, GraphQL

EXTRACURRICULAR & POR

- **Teaching Assistant** for ES654 - Machine Learning (IITGN) *Spring 2020*
- **Teaching Assistant** for CS301 - Operating Systems (IITGN) *Fall 2020*
- Secured silver medal in Saptang's Network Security Hackathon - Inter IIT Tech Meet 9.0 *March 2020*
- Won first cash prize of INR 5000 for reporting bugs in IITGN internal network *March 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's up** at District Level inter-school competition for 3 years *2011 - 2013*

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 - Prof. Bireswar Das)
- **COVID19 DASHBOARD (Python, Django) covid19.iitgn.ac.in** *May 2020*
 - Developed and deployed COVID-19 dashboard for Ahmedabad with 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 - 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 - 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
- **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 - Prof. Joyce Mekie)