

Rohan Patil

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EDUCATION

University of California San Diego
M.S. Computer Science

California, USA
Present

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
2018-2020

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

- Worked on gravitational wave detection and understood the challenges of curved parameter space and non-metric distances
- Along with various random approximate search methods, explored various filtering techniques as GW have comparatively 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)
May-Oct. 2020

POSITION: SOFTWARE ENGINEERING INTERN

- Designed part of API backend for exercise management system for trainers
- 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
May-July 2019

UNDER GUIDANCE OF PROF. BIRESWAR DAS

- 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
- 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
- **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 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 **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 (**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 Spring 2020
- **Teaching Assistant** for CS301 - Operating Systems 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** 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)