# Rohan Patil

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## EDUCATION

**University of California San Diego**  *California, USA*
*Ph.D. Student, Computer Science (Advisor: Henrik Christensen)*  *Sept. 2023 - present*
*M.S. Computer Science and Engineering, CGPA  4.0*  *Sept. 2021 - June. 2023*

**Indian Institute of Technology Gandhinagar**  *Gandhinagar, India*
*B. Tech, Computer Science and Engineering, CPI  9.55/10*  *2017 - 2021*
*Institute Silver Medal*

## INTERNSHIPS

**Cruise**  *Remote*
Position: PhD Intern, AI Robotics  *July - Sept 2024*
- Understanding the complexity of road events for Autonomous vehicles
- Developed a technique to search for relevant road events
- Investigated deep learning methods for searching road events

**The Trade Desk**  *Irvine*
Position: Software Engineer Intern  *June - Sept 2022*
- Modelling of user Monetary value and conversion probability
- Scaling of machine learning model with extreme data skew
- Development of metrics for insights and data collection pipeline

## PUBLICATIONS & POSTERS

- **Rohan Patil**, Alexander Langley, Henrik Christensen
  *Scaling up multi-agent patrolling in urban environments.*
  *Open Architecture/Open Business Model Net-Centric Systems and Defense Transformation 2023. Vol. 12544. SPIE, 2023.*

- 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*

- **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 6 (2021): 1-19*

- Rithwik Kukunuri, Anup Aglawe, Jainish Chauhan, Kratika Bhagtani, **Rohan Patil**, Sumit Walia, Nipun Batra
  *EdgeNILM: Towards NILM on Edge devices*
  *Proceedings of the 7th ACM International Conference on Systems for Energy-Efficient Buildings, Cities, and Transportation. 2020*

## SKILLS

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|---|---|
| **Programming** | Python, C/C++, LaTeX, Verilog, Rust, Go |
| **Web Development** | Django, CSS, HTML5, JavaScript, GraphQL |
| **Libraries & Frameworks** | PyTorch, TensorFlow, Numpy, Pandas, Jupyter, Scipy, ROS |

## EXTRACURRICULAR & POR

- **Teaching Assistant** for ES654 - Machine Learning (IITGN)  *Spring 2021*
- **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*

# PROJECTS & PRESENTATIONS

- GRAVITATIONAL WAVE DETECTION USING APPROXIMATE RANDOM SEARCH *2018-2020*
  - Understood the challenges of curved parameter space and non-metric distances
  - Explored filtering techniques as GW have comparatively low SNR
  - Theoretical reduction in time complexity search opens the possibility of near real time analysis
- SHORT SURVEY ON DEVELOPMENT OF DATA DRIVEN TECHNIQUES IN ONLINE ADVERTISING *June 2020*
  - Surveyed user profile creation, audience segmentaion 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 parallelizataion 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)

- EMAIL PARSER *(Python, Stanford NLP API, Gmail API)* *Jan. 2019*
  - Tackled the Email Parsing problem in Hackathon at IIT Gandhinagar with four others
  - Extracted detials of seminars, talks and workshops using NLP
  - Presented a live demo of the same