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

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

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 an 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

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

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 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 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