KEERAT KAUR GULIANI

Final Year Undergraduate — Indian Institute of Technology Roorkee

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EDUCATION

Indian Institute of Technology, Roorkee   *July 2018 - Present*
Bachelor of Engineering, Civil(Major), Computer Science(Minor)
Cumulative Grade Point Average-9.64/10 (Departmental Rank: 2/151)

The Mother's International School, New Delhi   *2014 - 2018*
Percentage in Class 12- 98%
CGPA in Class 10- 10/10

CAREER INTERESTS

Data Science — Causality & Reinforcement Learning — Application of computational methods in Healthcare & Policy-Making — Deep Learning
Self-motivated and Quality-oriented, I am driven by the impact of my work.

PAPERS

- ***VacSIM: Learning Effective Strategies for COVID-19 Vaccine Distribution using Reinforcement Learning*** [Preprint][Dashboard]
  A: Raghav Awasthi, Keerat Kaur Guliani, Saif Ahmad Khan, Aniket Vashishtha, Arshita Bhatt, Mehrab Singh Gill, Aditya Nagori, Aniket Gupta, Ponnurangam Kumaraguru, Tavpritesh Sethi
  Currently under review at AIM Elsevier. Submitted to *AAAI 2021*. Presented at the *RAISE Summit 2020* & *MIT's Vaccines For All Conference.*

- ***Less Wrong COVID-19 Projections With Interactive Assumptions*** [Preprint]
  A: Aditya Nagori, Raghav Awasthi, Vineet Joshi, Suryatej Reddy Vyalla, Akhil Jarodia, Chandan Gupta, Amogh Gulati, Harsh Bandhey, Keerat Kaur Guliani, Mehrab Singh Gill, Ponnurangam Kumaraguru, Tavpritesh Sethi
  Submitted to the *Bulletin of the World Health Organisation.*

- ***DEAP Cache: Deep Eviction Admission and Prefetching for Cache*** [Preprint]
  A: Ayush Mangal, Jitesh Jain, Keerat Kaur Guliani, Omkar Bhalerao
  Submitted to *AAAI 2021* as a Student Abstract.

- ***Universal Adversarial Perturbations - A Survey*** [Preprint]
  A: Ashutosh Chaubey, Nikhil Agrawal, Kavya Barnwal, Keerat K. Guliani, Pramod Mehta
  Submitted to *ACM CSUR.*

INTERNSHIPS

- **HPO in Reinforcement Learning**   **July 2021-Present**
  Machine Learning Lab, University of Freiburg (DAAD-WISE'21), Germany
  Working on hyper parameter optimisation in model-based and model-free contexts in reinforcement learning.

- **Learning Analytics[Intern Diary]**   **Summer 2021**
  Data Science Intern, Plio@Avanti Fellows
  Worked on analysing the learning behaviour of students using the Plio, India's largest open-source Education Tech stack, to shape their learning.

- **Synaptic Connectivity Detection [Intern Diary]** June-December 2020
  Lichtman Lab, Harvard University
  Performed Synaptic Location & Connectivity Detection to get Synaptic Segmentation in the mouse cerebellum to aid Developmental Connectomics research.

- **CoronaActionIndia** Summer 2020
  MEDAIM, IIIT Delhi
  Developed an OpenAI gym environment from scratch as a basis for a novel RL pipeline VacSIM to ensure fair distribution of vaccines developed against Corona virus.

PROJECTS

- **Synthetic Data Generation [Slides][Code]** March 2021
  Volunteer at Data Dive, DataKind
  Worked in collaboration with Medic Mobile and Dimagi, to use ML & AI tools to generate, assess synthetic patient data and provide recommendations for its development via statistical hypothesis testing.

- **Classification of EEG Signals[Code]** Summer 2019
  CBTB Lab, IIT Roorkee
  Developed machine-learning architectures to classify the EEG Signals into Focal or Non-focal epileptic type, that would increase efficiency & accuracy of epileptic diagnosis.

OTHER EXPERIENCE

- **Attendee, Women in Data Science(WiDS) Conference** March 2021

- **Finalist, Goldman Sachs Women's Possibilities Summit: Finance** Feb 2021
  Selected based on submission of technological problem statement and solution design.

- **Attendee, NeurIPS Conference [Certificate]** Dec 2020

- **Participant, Data Science for Social Good Workshop [Lightning Slide]** Nov 2020
  Georgia Institute of Technology, USA (Virtual)

- **Team Leader, Global Adobe Analytics Challenge** Oct 2020
  Successfully completed and made recommendations for improving the Nike experience based on a comprehensive analysis of their data using the Adobe Analytics workspace, amongst 1600 teams from across the world.

- **Delegate, Winter Workshop on Machine Intelligence & Brain Research** Jan 2020
  IIT Madras, India

TECHNICAL STRENGTHS

Programming Languages	Python, C++, Git, Shell Scripting
Operating Systems	Windows, Linux
Tools	MS Office(Excel, Word, PowerPoint), LaTeX, Jupyter Notebook, Streamlit, STAAD Pro, GIS, VAST, Mujoco
Relevant Courses Taken	Machine Learning—Probability & Statistics—Linear Algebra—Computer Vision—Numerical Methods & Computing—Electrical Engineering—Economics—Quantum Computing—Data Structures—Operating Systems—Systems Analysis—Data Mining for Business Intelligence—Algorithms & Analysis—Theory of Computation—DataBase Management Systems
Familiar with	Tensorflow, Pytorch, R

ACADEMIC ACHIEVEMENTS

- DAAD-WISE 2021 Scholar(Supervisor: Dr Frank Hutter)

- Awarded the Jagdish Prasad Shail Goyal Excellence IITR Heritage Foundation Award & Scholarship(March 2021).

- Awarded the ENCORE Scholarship for 2020-21 by IITR'89 Batch amongst top 10 students in Third Year B.Tech based on merit(Jan 2021).

- Awarded the Summer Research Fellowship for 2020 by the Indian Academy of Sciences.

- All-India Rank 7964, Joint Entrance Examination(Advanced) 2018 among 1,50,000 students.

- All-India Rank 7130, Joint Entrance Examination(Mains) 2018 among 12,00,000 students.

- All-India Rank 14558 and Category Rank(UR) 8891, National Eligibility cum Entrance Test (Medicine) 2018, among 13,26,000 students.

- National Talent Search Examination Scholar (2016).

EXTRA-CURRICULAR

- **Treasurer, ACM Student Chapter, IITR**:
  Student group enthusiastic about uniting the computing fraternity of IIT Roorkee via exploration of core Computer Science domains.

- **Co-President, Vision & Language Group, IITR [Website Link]:**
  Student group that fosters Deep Learning research culture in the campus by discussing relevant research papers and working on related projects.

- **Additional Secretary, The Debating Society, IITR**:
  My recent achievements in Parliamentary Debating include: Fifth best adjudicator, MukMem ProAm Debate, 2020 and Third best adjudicator, Overall Third at Inter-IIT Cultural Meet, 2019

- **Student Mentor, Student Mentorship Program, IITR**:
  Volunteer to help the batch of 2020-24 navigate through their first online year in college.

- **Editor, Watch Out![Website Link]:** Watch Out! Is the official campus media body of IITR.