

Safdar Wahid Inamdar

Roll No.:200002066

B.Tech - Electrical Engineering

Minor in Humanities and Social Science

Indian Institute Of Technology Indore

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EDUCATION

Degree/Certificate	Institute/Board	CGPA/Percentage	Year
B.Tech. Major	Indian Institute of Technology Indore	8.37	2020-Present
B.Tech. Minor	Indian Institute of Technology Indore	9.0	2021-Present
Senior Secondary	HSC Board	80.77%	2019
Secondary	ICSE Board	92.67%	2017

EXPERIENCE

- Dozee** May 2022 - Jun. 2022
Data Science Intern Bengaluru, India
 - Created a model to estimate heart rate based on **BCG signals** taken from patients for active monitoring of vitals.
 - Combined **Spectrogram based Pattern Recognition** with **Regression** to build a **fast and explainable algorithm**.
 - Improved **MAE by 2** and **detection rate by 1.7 times** for critical patient data compared to previous algorithm.

PROJECTS

- CloudPhysician's Vital Extraction Challenge** Jan. 2023 - Feb. 2023
Inter-IIT Techmeet 2023 (Gold Medal) [Github Repo Link](#)
 - Created a model to extract vitals like HR, RR, SpO2, BP, MAP and ECG from photos of patient monitors.
 - Built a novel **YOLOv8 based model** for object detection which used **PaddleOCR** for character recognition of vitals.
 - Reduced execution time of entire model to **300ms** and improved accuracy to **0.96** on a **CPU based runtime**.
- ML Based Enhancement of UAV-aided Wireless Communication System** Aug. 2023 - Dec. 2023
Prof. Prabhat Upadhyay, IIT Indore
 - Developed an ML-based algorithm to estimate the **ideal location of a UAV** for maximum communication quality.
 - Used **XGBoost classifier** coupled with **unsupervised techniques** on a **custom-built dataset** to maximize efficiency.
 - Improved model accuracy to **94.6%** and **reduced inference time by over 39 times**, allowing real-time applications.
- Bosch Model Extraction** Feb. 2022 - Mar. 2022
Inter-IIT Techmeet 2022 [Github Repo Link](#)
 - Developed a strategy to extract the **video-based models Swint-T and MoViNet** in black box and grey box settings.
 - Used **untrained Vanilla GAN and VideoGPT** to generate data for black box and grey box settings, respectively.
 - Trained a **Resnet-34 architecture** to steal the weights of the victim models so it can replicate their function.
- Plant Leaf Identification** Dec. 2021
Inter-IIT Selection Challenge [Drive Link](#)
 - Used the **Flavia leaf dataset**, and implemented various Data Augmentation techniques to prevent overfitting.
 - Implemented transfer learning of an **Efficient-net model**, pretrained on Imagenet-21k and finetuned on Imagenet-1k.
 - Created a model with a **test accuracy >0.997** after training for **5 epochs** on 512X512 images.

TECHNICAL SKILLS

- Programming:** C/C++, Octave, MATLAB, Python, MySQL, HTML, CSS
- Tools/Libraries/Frameworks:** Pandas, Numpy, Seaborn, TensorFlow, Keras, PyTorch, Fastai, Ultralytics
- Developer Tools:** Git, Github, VS, VS Code, PyCharm, Jupyter Notebook, Google Colab, Kaggle, Kubernetes

ACHIEVEMENTS

- 1st Position**, Inter-IIT Techmeet 2023, CloudPhysician's Vital Extraction Challenge, among 20+ institutes 2023
- 2 time Zonal Topper**, Mimamsa Quiz, national level puzzle-based quiz organized by IISER Pune 2022, 2023
- 3rd Position**, GAN Quiz, organized by The Cynaptics Club, IIT Indore among 50+ participants 2022
- 2nd Position**, Word Wars, organized by The Debating Society, IIT Indore among 60+ participants 2021
- All India Rank 2491**, JEE Advanced, Among 1 Million+ students 2020

KEY COURSES TAKEN

- Computer Science:** Data Structures and Algorithms, Object Oriented Programming, Database Management System, Operating System, Computer Organisation and Architecture, Network Theory, Statistical Modelling
- Mathematics:** Linear Algebra, Calculus, Differential Equations, Set Theory, Probability & Random Processes
- Electrical:** Microprocessors and Digital Systems Design, Control Systems, Power Electronics, Digital Signal Processing, Communication Systems, VLSI Systems and Technology, Electrical Measurements and Instrumentation

POSITIONS OF RESPONSIBILITY

- Head**, The Alumni Cell, IIT Indore Aug. 2022 - May 2023
- Editor-in-Chief**, The Literary Club, IIT Indore May 2022 - Apr. 2023
- Debating Head**, The Debating Society, IIT Indore Apr. 2021 - Apr. 2022
- Head of Content Creation**, TEDx, IIT Indore Jan. 2021 - Apr. 2021
- Member**, The Cynaptics Club, IIT Indore Jan. 2020 - Current