KARTIK CHINCHOLIKAR

I'm a Deep Learner who enjoys simplifying complex concepts into **short videos**. I will help you take design decisions to make the most out of domain knowledge, while allowing the data to do the rest.

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SKILLS:

- Ability to synthesize and communicate complex technical concepts clearly and concisely.
- Strong fundamentals in Linear Algebra, Probability and Calculus.

TOOLS:

Machine Learning Stack:
numpy, tensorflow, pytorch, pytorch-geometric, scikit-learn, matplotlib, pandas, conda & Vector Databases

Other Technical Tools:
AWS Studio Lab, MATLAB, R, Java, Android Studio, AutoCAD, Ansys

Adobe Creative Suite & More:
Photoshop, Premier Pro, Audacity, Canva, Prompt Designing for Generative AI

Productivity:
Zotero, Github, Notion, Obsedian, Discord

EDUCATION:

BE Mechanical Engineering
Savitribai Phule Pune University
India
First Class [2012-2016]

EXPERIENCE

Machine Learning Storyteller [2020 - Present]

- **A Study of the Manifold Hypothesis**

I compiled everything which excited me about this topic **in a video**. The video featured twice on popular YouTube channel **"Machine Learning Street Talk"**.

- **Simulations in Statistical Learning Theory**

Ran toy simulations to understand the need to use domain knowledge **to do feature engineering** and also **to choose a hypothesis class** *which is not too flexible, but flexible enough.*
Use of animation enabled easy exploration of topics such as the i.i.d assumption, PAC Learning, Feasibility of Learning, bias-complexity trade off, No-free-lunch theorem and the VC Dimension.
The resulting video was acknowledged by **Professor Shai Ben David**, who is a Professor of Theoretical Computer Science at University of Waterloo.

- **Visualizing mapping between Neural Network Layers**

Visualized the **non-linear mapping** between the input layer and hidden layer as the simple NN gets trained on the XOR toy dataset.

Equitech Futures [2022-2023]

- **Research Associate**

We **highlighted the risk factors** which make breast cancer patients undergoing chemotherapy more prone to nausea and vomiting (CINV).
Despite a small dataset size, the risk factors found **corroborated** with existing literature.
I made a novel contribution to the *Inclusion Criteria* via a data cleaning procedure which makes better use of domain knowledge, enabling fine tuned treatment.
Work done in collaboration with Oncology Department at the **Kenyatta National Hospital**, under the guidance of **Bhasi Nair** and **Abhilash Mishra**.

- **Teaching Assistant**

I assisted students with their assignments on:
Python Foundations, Bayesian Modelling, and Data Visualization.
I also had many insightful discussions on the *feasibility* of AI applications to various domains.

Badminton School [2018-2022]

- **Sports Analytics**

Made an annotation tool to manually collect the data of the badminton player to be analyzed.
Derived **insights** from the data to find common "Patterns of Play". These patterns can be exploited during a match.

- **Advertising and Content Creation**

Started a **Youtube channel** teaching the basics of Badminton in Hindi, garnering **34k Subscribers**.

SportShack [2016-2017]

- **Android Development**

Build an Android app which enabled runners to share screenshots with friends.

- **Gamification**

Designed a rating system to motivate runners to be consistent.