




KARTIK CHINCHOLIKAR

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

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SKILLS:

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

TOOLS:

Machine Learning Stack:

numpy, matplotlib, tensorflow, pytorch, pytorch-geometric, scikit-learn, pandas and conda envs.
I've gotten my feet wet with Django, Flask, Node.js and Github Actions.

Adobe Creative Suite & More:

Mood boarding + Photoshop, Premiere Pro, Audacity, Canva, Prompt Designing for Generative AI

Other Technical Tools:

MATLAB, R, AutoCAD, SOLIDWORKS, Ansys, Java, Android Studio

Productivity:

Zotero, Notion, Obsidian, Discord, Slack

EDUCATION:

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

WORK EXPERIENCE

Machine Learning Storyteller [2020 - Present]

- **A study of Group Equivariant Neural Networks**

[Visualized a forward pass](#) through a neural network architecture which has been *designed to respect the symmetries* of the ground truth data-labeling function. Incorporating such prior knowledge to design data-efficient models is crucial in domains where data collection and labeling is expensive.

[The video](#) was acknowledged by geometric deep learners [Taco Cohen](#) (Qualcomm) and [Erik Bekkers](#) (University of Amsterdam).

- **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 [Shai Ben David](#), Professor of Theoretical Computer Science at University of Waterloo.

- **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](#).

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 [2018-2020]

- **Sports Analytics**

Made an annotation tool to manually collect the data of the badminton player to be analyzed.

Derived [insights](#) from sequential data to find common "Patterns of Play". These patterns can be exploited during the crucial moments of 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**

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

- **Gamification**

Designed a rating system to motivate runners to be consistent.