

Automated COVID-19 Detection Using Machine Learning

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Why This Project?

- Developing a **web app** that can predict COVID-19 infection just by analyzing cough sounds.
- Imagine creating a tool that can help detect COVID-19 early, just by using a smartphone or computer.
- You'd be working on something that combines **technology** and **healthcare**—two fields that are rapidly growing.
- Plus, it's a chance to build a project that's not only cool but also useful in the real world.



What Will You Learn?

If you choose this project, you'll gain hands-on experience in:

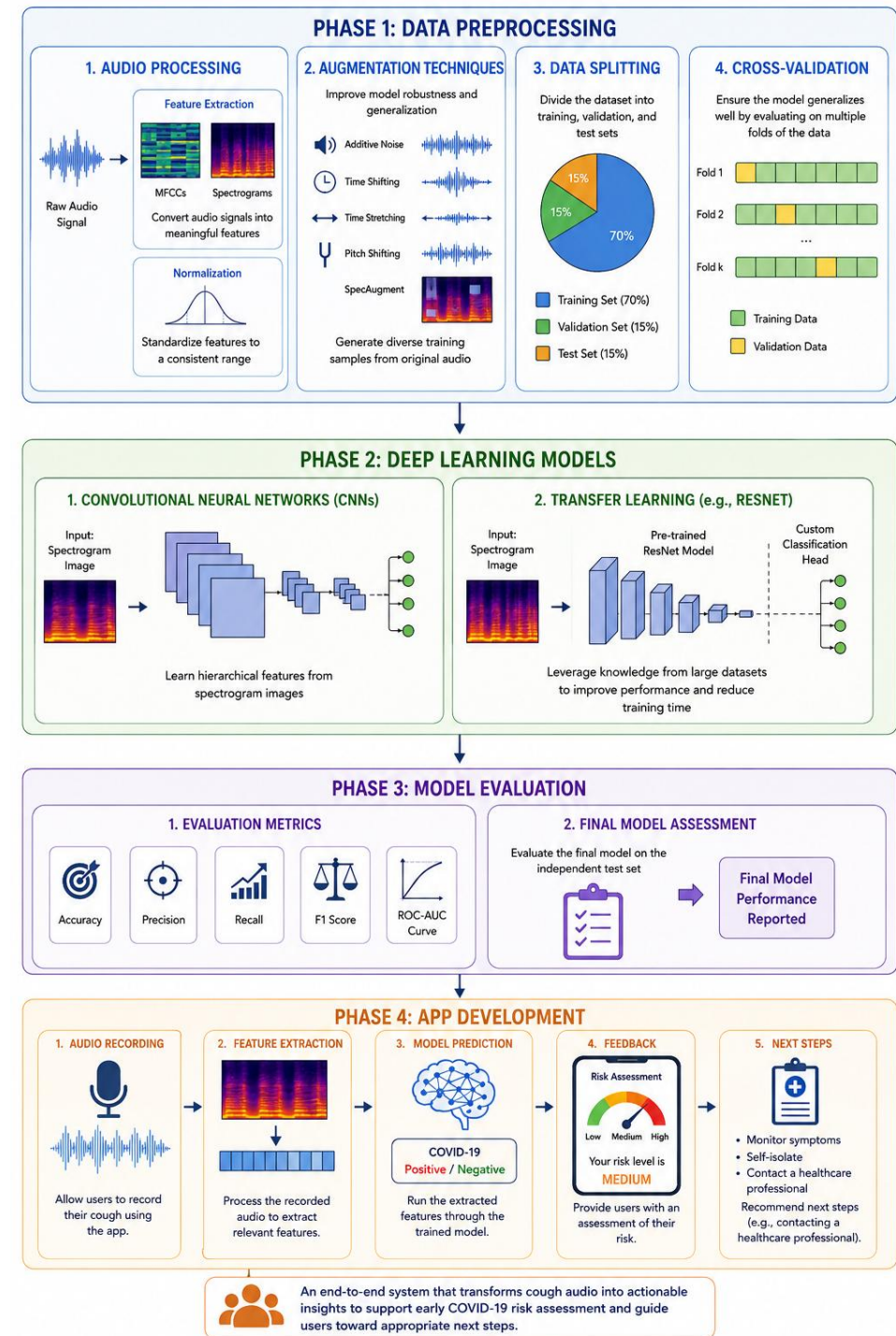
1. **Web Development:** You'll design a user-friendly app where people can record their coughs.
2. **Machine Learning:** You'll build and train a Convolutional Neural Network (CNN) to analyze these cough sounds.
3. **Integration:** You'll combine the machine learning model with the web app for real-time predictions.
4. **Data Visualization:** You'll create a feature that tracks how a user's condition changes over time.



CoughVid Dataset:

- **Content:** The CoughVid dataset includes **audio recordings** of coughs from both COVID-19 **positive** and **negative** individuals.
- <https://www.kaggle.com/datasets/andrewmvd/covid19-cough-audio-classification>
- **Data Characteristics:**
 - 2800 audio recordings for Covid-19 classification and severity regression.
 - Audio files are labeled with the COVID-19 status of the individual.
 - The dataset may include metadata like age, sex, and symptoms.

Overall Framework



Deliverables

- **Planning and Design:**
 - Project plan and requirements documentation.
- **CNN Development:**
 - Trained CNN model and performance evaluation report.
- **Web App Development:**
 - Functional web application with integrated CNN model.
- **Testing and Refinement:**
 - Test reports and refined web app.
- **Final Presentation:**
 - Demo video showcasing the app's functionality.
 - Project poster summarizing objectives, methodology, and results.
 - Final project presentation.

What's the End Goal?

- By the end of the project, you'll have:
- **A fully functional app** that not only predicts COVID-19 from cough audio but also shows users how their health changes over days.
- It's a project that could actually help people and looks great on your resume.



Thank
you!