السلام عليكم ازيكم يا شباب ؛ هبعت ليكم افكار المشاريع ؛ هم 17 فكرة كلهم classification tasks كل فكرة هيشتغل فيها 5 تيمات كحد اقصى فبالتالى كل تيم هيختار 5 افكار بالترتيب اول فكرة هتختارها هتبقى ليها اعلى اولوية يعنى هترتبهم بترتيب الاولويات بتاعتك وفى الاخر انا هعلن لكم الفكرة اللى اتعمللها assign لكل تيم بناءا على ترتيب اختيارات واسبقية الاختيار التيم هيكون من 6-7 افراد وهفتح لكم فورم التتسجيل يوم الثلاثاء القادم الساعة 4 عصرا باذن الله وهتفضل متاحة لغاية يوم الجمعة القادم الساعة 4 عصرا علشان بعدها مباشرة هعلن لكم ال assigned idea for each team

الفورم دى هتسجلو فيها بيانات اعضاء التيم واختيار ال5 افكار لذلك مطلوب منكم دلوقتى انكم تكونوا التيمات وتستقرو على الافكار اللى هتختاروها ايا كانت الفكرة اللى هتختاروها فال requirements ثابتة كدا كدا

مطلوب منكم تطبقو:

- VGG-19 architecture from scratch with its implementation
- ResNet using its pre-trained model with only transfer learning on your dataset
- Inception V1 using its pre-trained model with only transfer learning on your dataset
- MobileNet or ViT (Vision Transformer)

- ❖ تعرضو ال evaluation metrics لكل مودل من الاربعة وهنحتاج accuracy, confusion matrix visualization, recall, precision, f-score, ROC, AUC visualization documentation تتضمن شرح كل الarchitectures المستخدمة بخطوات و graphs , وتحطو الreferences اللى اعتمدتم عليها ومن ضمنها اهم حاجة طبعا reference لل papersاللى قدملتنا ال arhitectures دى
- ❖ مقارنة بين ال4 modelsعلى مستوى النتائج اولا وفى الdocumentation ثانيا بحيث توضحلى pros,cons لكل architectureوسبب تفوق بعض النماذج عن الاخرى مع طبيعة ال task, data بتاعتك.

ودى افكار المشاريع :

1. Face Classification Description: Build a model to classify individuals based on their faces, enabling tasks like face recognition or verification. Dataset: LFW (Labeled Faces in the Wild), VGGFace2. Additional Notes: Students can implement transfer learning using pre-trained face recognition models for improved accuracy.
2. Alphabet Classification Description: Classify images of handwritten or printed alphabet characters (English or Arabic). Dataset: EMNIST, A-Z Handwritten Letters Dataset. Additional Notes: Focus on different alphabets and extend the project to multi-language classification.

3. Gesture Classification Description: Detect and classify hand gestures, such as a "peace sign" or "help" gesture. Dataset: Kaggle Gesture Recognition Dataset. Additional Notes: Can be extended for real-time gesture detection using webcam input.
4. Plant Disease Classification Description: Classify diseases in plants by analyzing images of their leaves. Dataset: PlantVillage Dataset. Additional Notes: Useful for agriculture applications; experiment with mobile-based deployment.
5. Medical Image Classification Description: Classify medical images, such as X-rays or CT scans, to detect diseases like pneumonia. Dataset: Chest X-ray Dataset, NIH Dataset. Additional Notes: This project could involve domain-specific pre-processing and explainable AI techniques.
6. Short Video Classification Description: Classify short video clips based on their content, such as action detection or scene classification. Dataset: UCF101, Kinetics. Additional Notes: Explore combining spatial and temporal features for higher accuracy.
7. Car Type Classification Description: Classify the make and model of cars based on images. Dataset: Stanford Cars Dataset. Additional Notes: Explore fine-grained classification to handle similar-looking car models.
8. Artwork Classification Description: Classify types of artwork, such as paintings, sketches, or photography. Dataset: WikiArt Dataset. Additional Notes: Consider experimenting with style transfer for creative extensions.
9. Tree Species Classification Description: Identify the species of trees using images of their leaves. Dataset: Fossil Leaf Dataset, Flavia Dataset. Additional Notes: Can be extended for biodiversity research or educational tools.
10. Virus Classification Description: Classify microscopic images of viruses or bacteria. Dataset: Virus Image Dataset (Kaggle). Additional Notes: Focus on domain adaptation and transfer learning to improve classification of medical data.
11. Human Tissue Classification Description: Classify different types of human tissues, such as neural or muscle tissues. Dataset: The Cancer Imaging Archive. Additional Notes: Potential use in pathology and histology.

12. Celebrity Face Classification Description: Classify celebrity faces based on their identities. Dataset: LFW, VGGFace2. Additional Notes: Can integrate transfer learning using pre-trained facial feature extraction models.
13. Satellite Image Classification Description: Classify satellite images based on land types, such as urban, forest, or water bodies. Dataset: EuroSAT Dataset. Additional Notes: Use for geographic analysis or urban planning.
14. Industrial Equipment Fault Classification Description: Detect and classify faults in industrial equipment using images. Dataset: Fault Detection Dataset (Kaggle). Additional Notes: Explore anomaly detection for better fault identification.
15. Weather Classification Description: Classify weather conditions such as sunny, rainy, or stormy based on images. Dataset: Weather Dataset (Kaggle). Additional Notes: Extend to real-time weather detection using IoT devices.
16. Birdsong Classification Description: Classify bird species based on their recorded songs or audio clips. Dataset: BirdCLEF Dataset. Additional Notes: Experiment with spectrogram features for better sound classification.
17. Raw Materials Classification Description: Classify raw materials like metals, wood, or plastic from images. Dataset: Materials Dataset. Additional Notes: Useful for industrial sorting and recycling applications.

من الممكن الاعتماد على داتاسيت مختلفة عن المذكورة مع الفكرة لو فيه صعوبة فى الوصول او
الاستخدام للداتاسيت دى لكن لازم تجيبو داتا سيت برده مناسبة لنفس التاسك وبحجم كويس مش صغيرة بالتوفيق يا شباب