

zant

October 4-5

TINY_HACK

Turin

The first Embedded AI Vision hackathon

Focus AI

Git-Straight

Rebase your spine

I Cestiny: Nicco, Baio e Matte

with the support of:



TOOLBOX

Datapizza



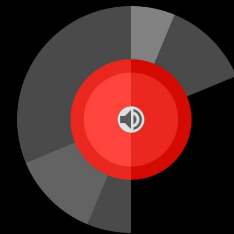
TINY_HACK

1. Project Overview


📊 **Goal** : Classify a desk posture as 'good' or 'bad' and notify the user

🎯 **Use case in brief**: People easily forget and fall out of a correct sitting position damaging their health







2. Dataset & Model

 **Dataset:** We combined two different datasets to cover a wider range of sitting desk postures (source:roboflow)

 **Model architecture:** fai-cls-n(& s)-coco

 **Trade-offs:** To meet the physical constraints of the Nicla Vision Board we chose not to use bigger and more complex models while still trying to get the best out of the smaller sizes;)

 **Reasoning:** The limited size of the classification model will limit the possibility of going over budget with memory

3. Deployment Pipeline



Pipeline steps

- Model finetuning
- Model quantization
- ONNX Model processing
- Model deployment on the microcontroller
Nicla Vision



Performance:

frame rate:
latency,
...pipeline steps

4. Challenges we faced

- Issues with metrics
- Issues on arm64



5. Impact & Next Steps



★ Git-Straight directly addresses an issue that is most probably common even in this same room



Where to go from here? Improve performance by collecting more data; Exploit more of the available sensors on microcontroller



An honorable mention goes to the feature we initially wanted to implement; Gesture stopping

That 's a wrap! 🌮

Thanks