Tiny Familiar Face Identification

A Privacy-Preserving Solution for Personalizing Your Devices

Tim de Bruin
Plumerai

- Plumerai People Detection
- Plumerai Head Detection
- **Plumerai Familiar Face Identification** ← This presentation
- Plumerai Inference Engine – ML Compiler
How Plumerai makes AI tiny

We cover the entire AI stack

- Plumerai Data Pipeline
- Plumerai Tiny Models
- Plumerai Inference Engine
- Tiny MCUs and SOCs

- 30M images, extensive in-house tooling to analyze, label, and optimize
- Custom architectures and training strategies
- World's fastest inference engine
- Run it on low power, small processors
Tim came home!

Fully local, no cloud. Preserves privacy.

Shall I make you a Quad Venti White Mocha Frappuccino again?
Face Identification
Face Identification

Object Detector
Face Identification
Face Identification
Face Identification
Face Identification
Face Identification
Face Identification
Face Identification: enrollment
Face Identification: enrollment
Face Identification: inference
Face Identification: inference
Making it **tiny & fast**
Making it tiny & fast
Making it tiny & fast

Embedding network

Knowledge Distillation
~70x smaller
Making it tiny & fast

Plumerai Tiny Models

Plumerai Inference Engine

Tiny Chips

Custom architectures and training strategies

World's fastest inference engine

Run it on low power, off-the-shelf small processors

SINGLE CORE ARM CORTEX-A72 @ 1.5 GHz

WITH A TINY FOOTPRINT

22 frames/s  5.7 MB
Making it accurate
Making it **accurate**
Making it **accurate**
Making it accurate
Making it **accurate**
Try it yourself!

https://plumerai.com/face-identification-live
tim@plumerai.com
hello@plumerai.com
plumerai.com
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