

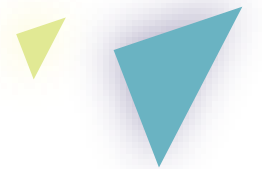
COMPUTER GRAPHICS NIGHT

Thursday, November 30, 2023

BEST PAPER AWARD

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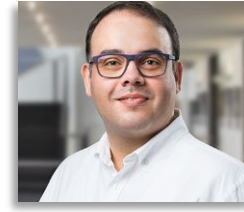
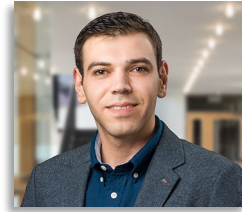
»IMPACT ON BUSINESS«



Best Paper Award

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Boutros, Fadi (Fraunhofer IGD/ TU Darmstadt)

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Damer, Naser (Fraunhofer IGD / TU Darmstadt)

Kirchbuchner, Florian (Fraunhofer IGD / TU Darmstadt)

Kuijper, Arjan (Fraunhofer IGD / TU Darmstadt)

»PocketNet: Extreme Lightweight Face Recognition Network Using Neural Architecture Search and Multistep Knowledge Distillation«

IEEE Access, 10, pp.46823-46833

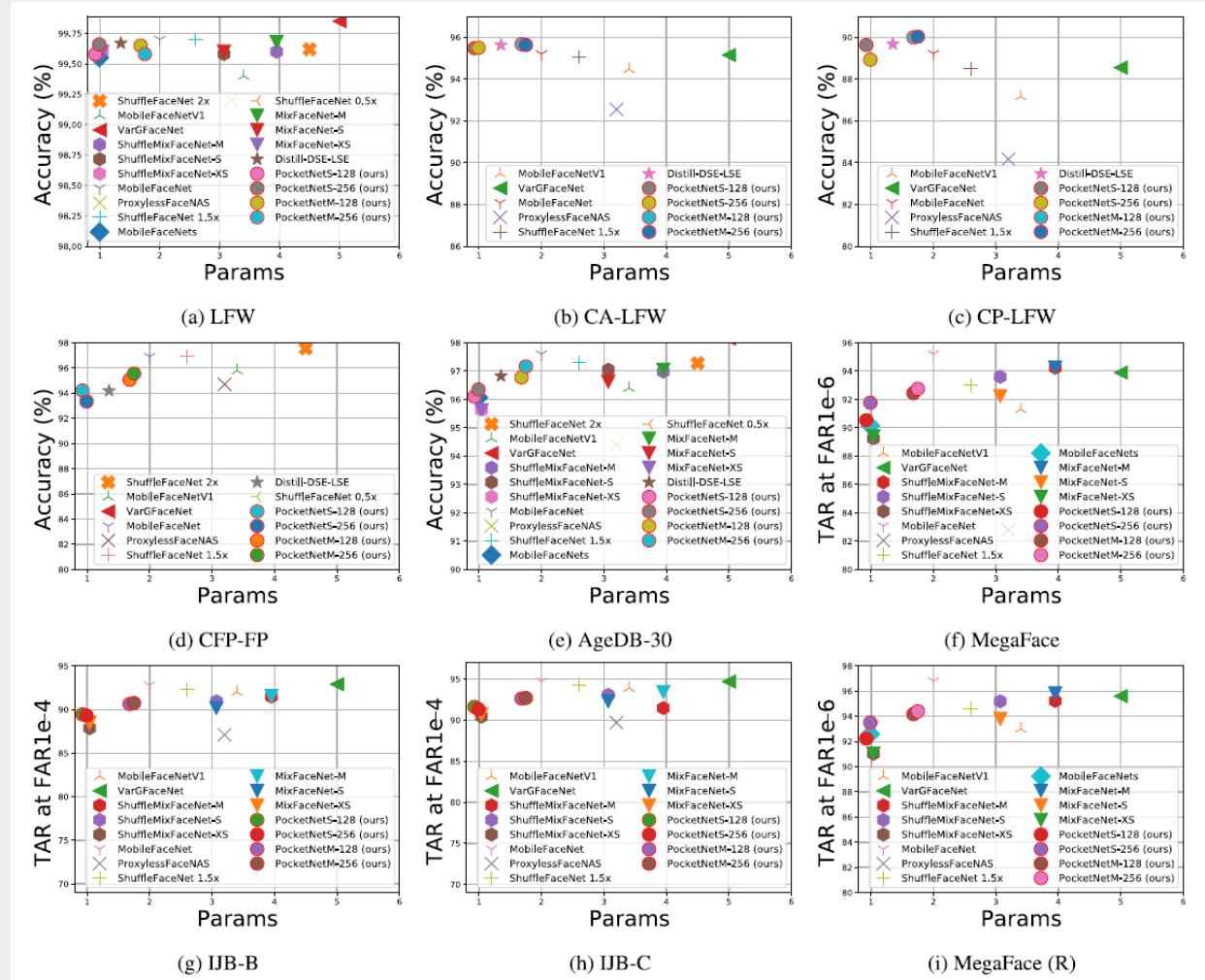
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PROBLEM

- Contemporary facial recognition algorithms necessitate substantial computational capacity, surpassing what is typically available in mobile and embedded systems.
- The feasibility of implementing a highly efficient yet precise facial recognition system on resource-constrained embedded and low-end devices warrants investigation.



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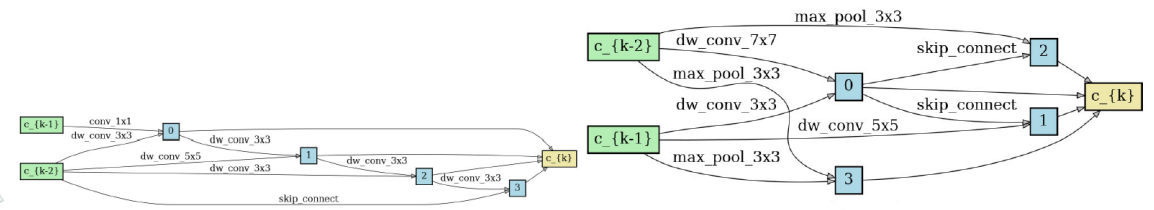
RESULT

- The paper pioneers the use of Neural Architecture Search (NAS) for creating a compact face recognition model.
- It introduces an innovative multi-step knowledge distillation (KD) training approach.
- PocketNets attains state-of-the-art performance while notably reducing network parameters.

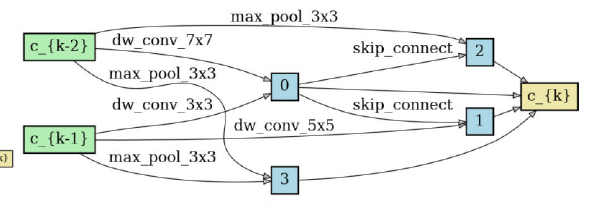


USP

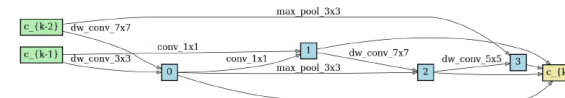
- Introduces PocketNets, a new family of extremely lightweight yet accurate face recognition (FR) models.
- PocketNets offer a highly efficient alternative for face recognition tasks, particularly suitable for deployment on embedded and low-end devices.



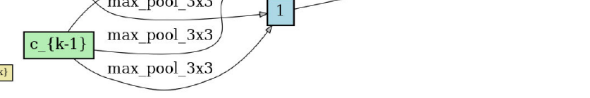
(a) Normal cell learned on CASIA-WebFace.



(b) Reduction cell learned on CASIA-WebFace.



(c) Normal cell learned on CIFAR-10.



(d) Reduction cell learned on CIFAR-10.

