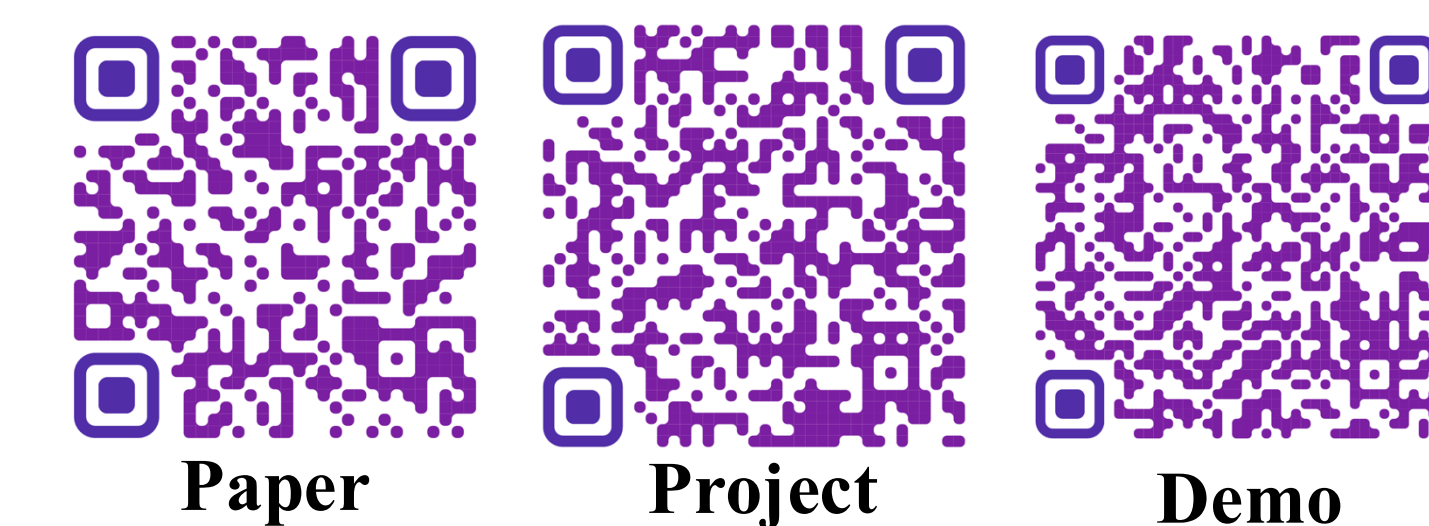# ID-Patch: Robust ID Association for Group Photo Personalization

Yimeng Zhang[1,2], Tiancheng Zhi[1], Jing Liu[1], Shen Sang[1], Liming Jiang[1], Qing Yan[1], Sijia Liu[2], Linjie Luo[1]

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Paper   Project   Demo

Introduction

- **Task**
  Synthesize personalized group photos and specify the positions of each identity offers immense creative potential.

- **Challenges**
  OMG [1] uses a two-stage process: generate without IDs, then inject identities via segmentation.
  - Relies on accurate segmentation
  - Slow: separate denoising per person

  InstantFamily [2] applies identity-aware attention masks in one pass.
  - Suffers from mask <u>inaccuracies</u> and <u>overlapping</u> faces
  - Information <u>leakage</u> through attention and convolution
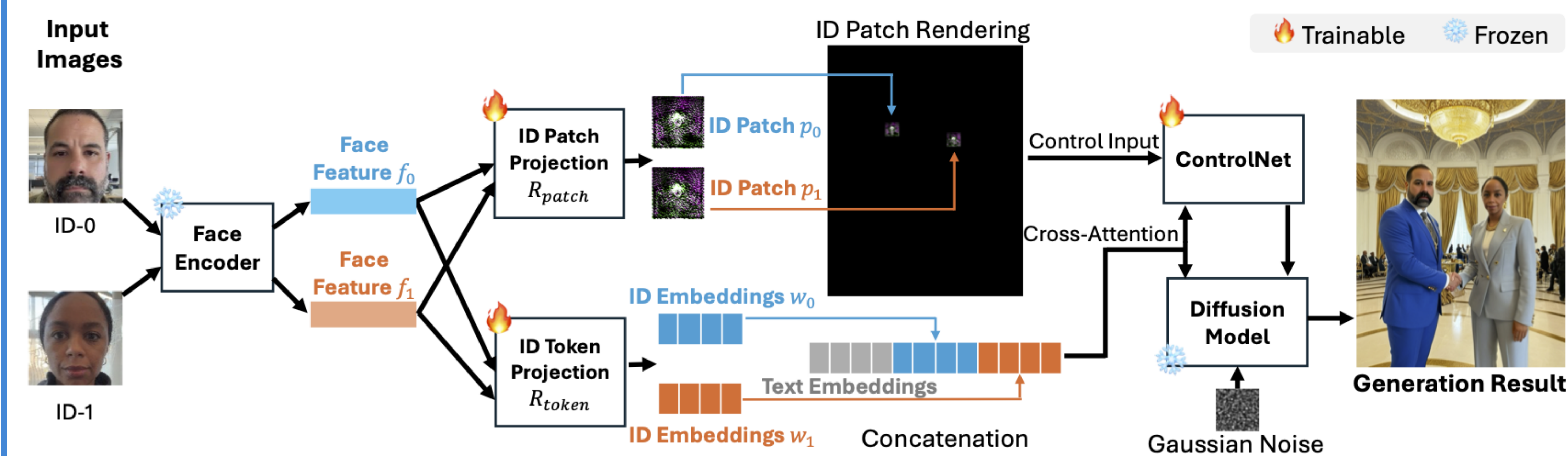
- **Contributions**
  - **ID-Patch** links identity features with spatial positions <u>via visual patches</u> for precise control.
  - *Efficient*: Simplifies multi-ID generation with minimal computation.
  - *Robust*: Avoids segmentation models; uses single-point control.
  - *Accurate*: Delivers superior identity fidelity and spatial placement, especially in complex scenes.
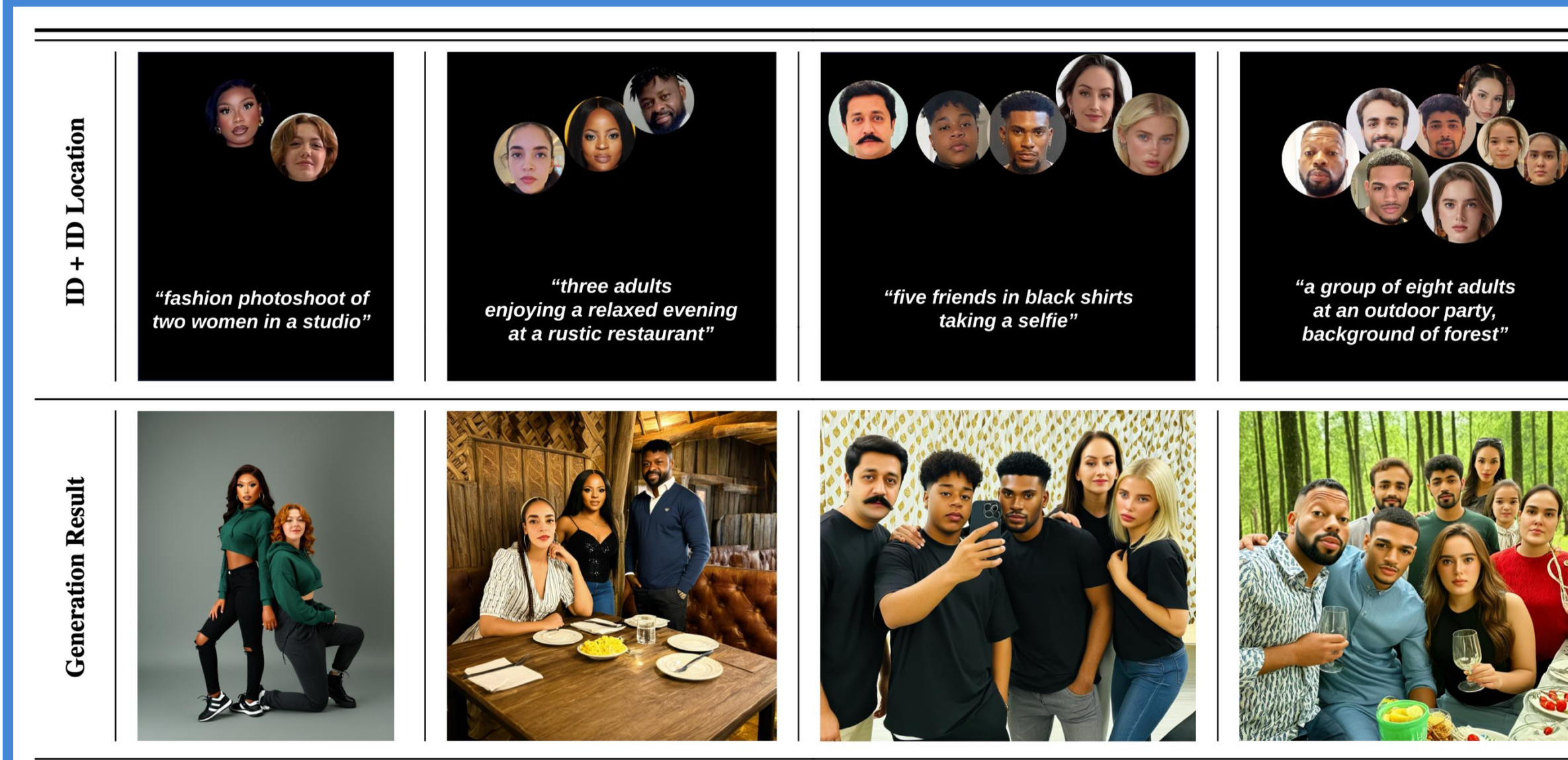
Reference

[1] Kong, Zhe, et al. "Omg: Occlusion-friendly personalized multi-concept generation in diffusion models." ECCV 2024.
[2] Kim, Chanran, et al. "Instantfamily: Masked attention for zero-shot multi-id image generation." arXiv preprint arXiv:2404.19427 (2024).
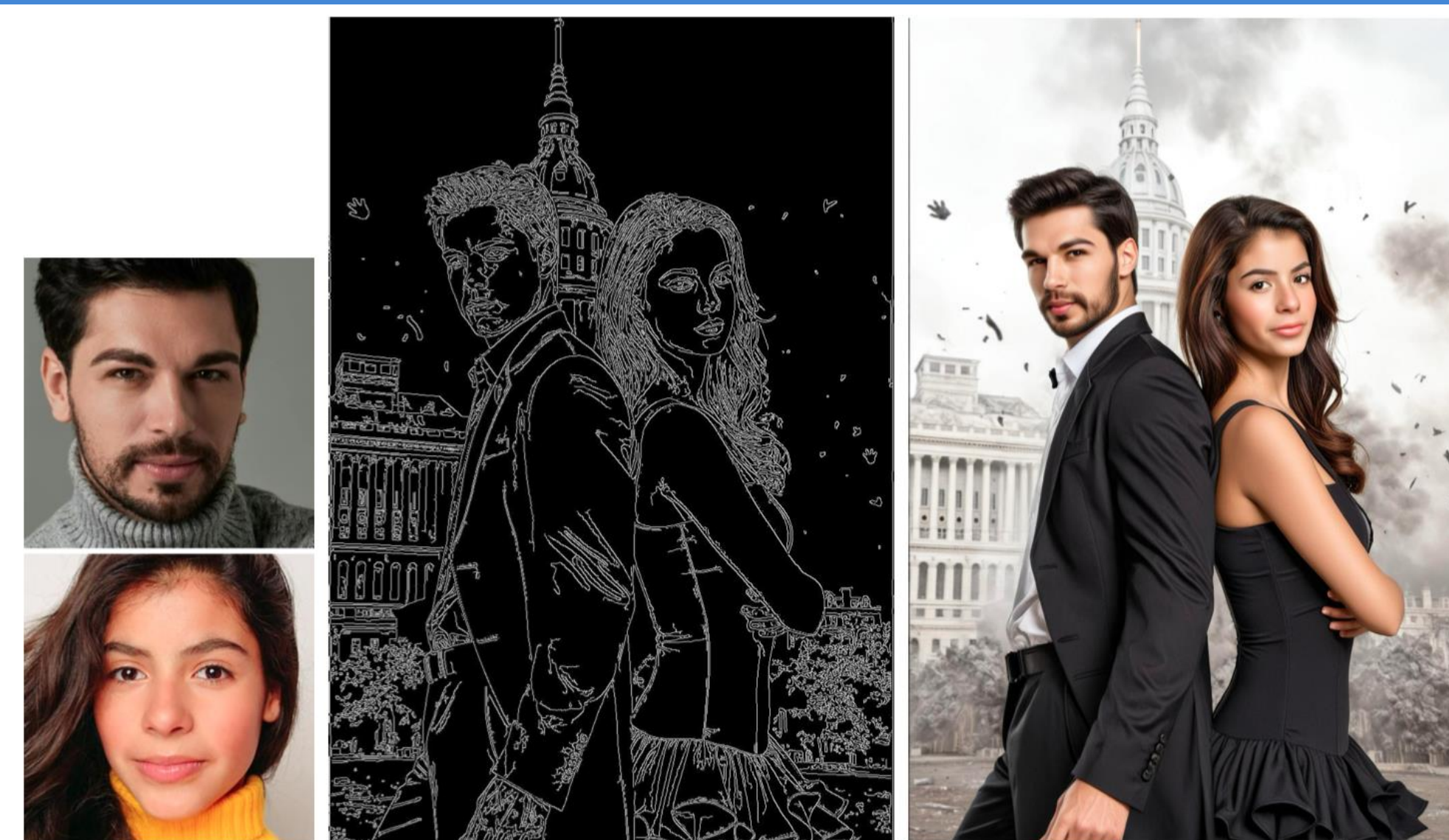
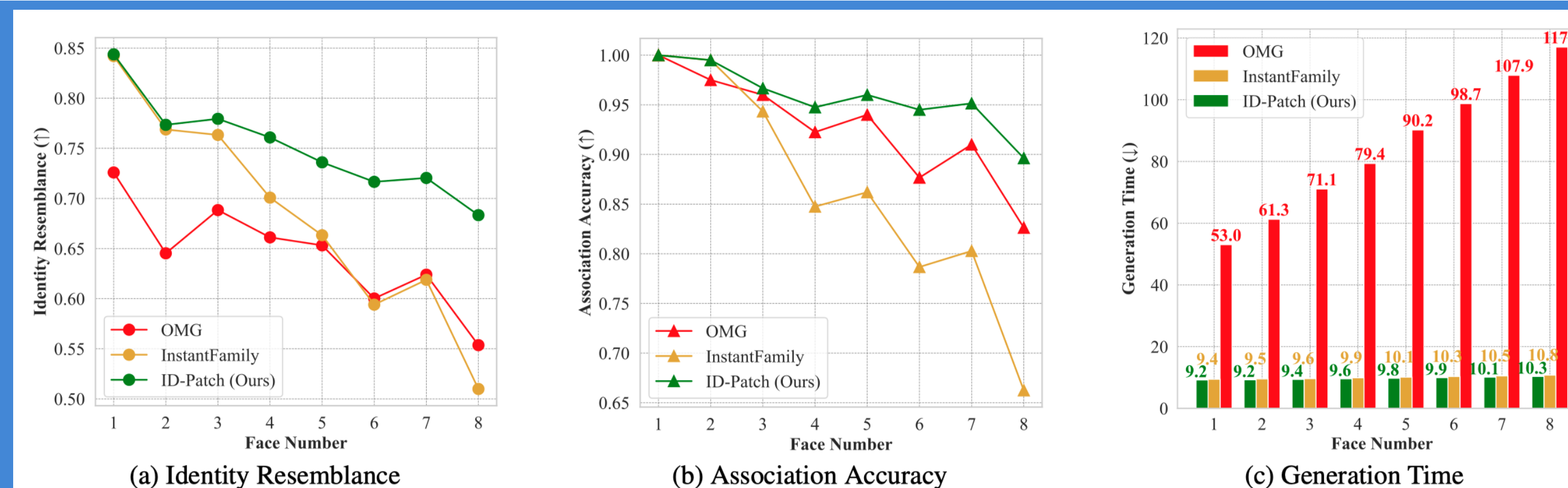## ID-Patch: Build Identity-to-Position Association

Pose-Free Generation

Plug-and-Play: Canny Edge

Evaluations

(a) Identity Resemblance   (b) Association Accuracy   (c) Generation Time

Limitations

Visualizations

ID + Pose   OMG   InstantFamily   ID-Patch (Ours)