

SegAnimeChara: Segmenting Anime Characters Generated by AI

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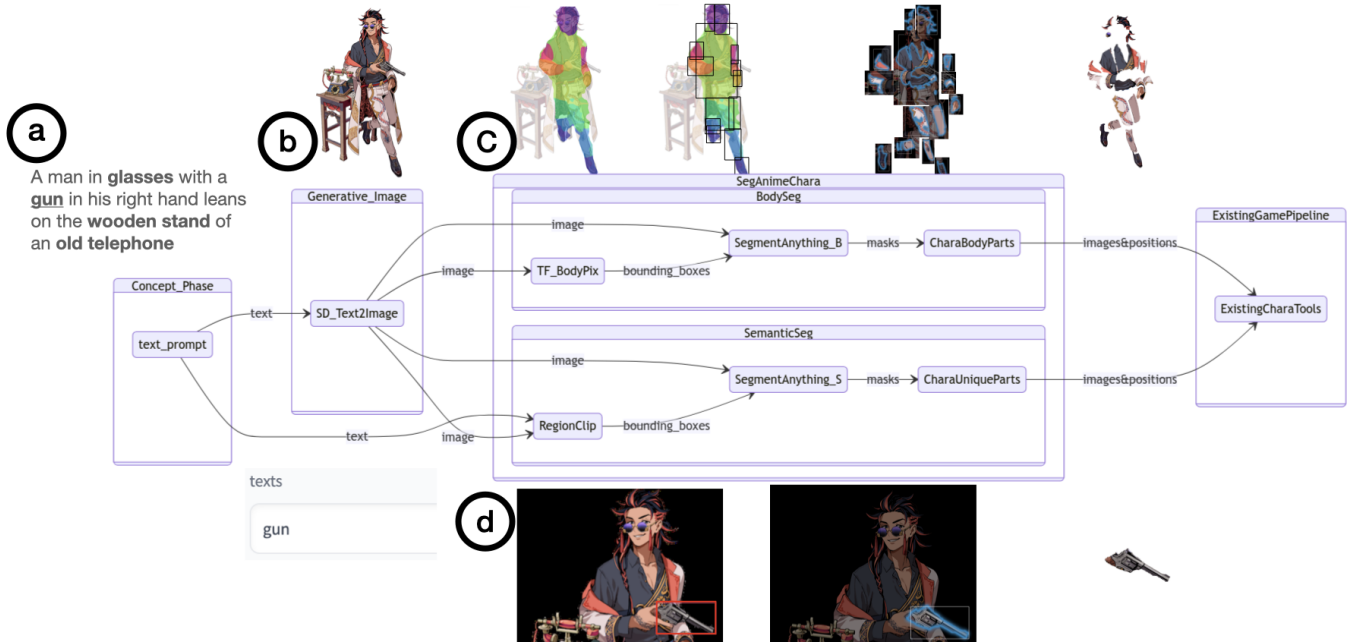


Figure 1: Segmentation Pipeline; (a) Game artists take an idea described in words (b) Text2Image generates images from text prompts (c) Body Segmentation splits images into body parts (d) Semantic Segmentation is generated from text prompts

ABSTRACT

This work introduces SegAnimeChara, a novel system of transforming AI-generated anime images into game characters while retaining unique features. Using volume-based body pose segmentation, SegAnimeChara can efficiently, zero-shot, segment body parts from generative images based on OpenPose human skeleton. Furthermore, this system integrates a semantic segmentation pipeline based on the text prompts of the existing Text2Image workflow. The system conserves the game character’s unique outfit and reduces the redundant duplicate text prompts for semantic segmentation.

CCS CONCEPTS

• **Computing methodologies** → *Computer graphics; Computer vision.*

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KEYWORDS

Game, Design, Anime, Manga, Otaku, Character Segmentation, Semantic Segmentation, Pose Segmentation, Body Segmentation

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1 INTRODUCTION

AI generative images, e.g., Stable Diffusion and Midjourney, alter the game industry’s workflow for creating concept posters and styling scenes. However, converting these images into 2D animation-ready characters remains challenging and time-consuming. In the conventional design pipeline, designers typically spend a day separating and reconstructing anime body parts. Using natural human recognition methods to segment anime characters can also result in undesired outcomes that do not integrate well with existing game design pipelines. For anime and cartoon characters, Takayama [Takayama et al. 2012] first proposed a feature-based zero-shot extraction method, not requiring sample images. However, this inspiring method only addressed face and hair recognition by color and

