The Drawing Assistant: Automated Drawing Guidance and Feedback from Photographs

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Abstract: We present an interactive drawing tool that provides automated guidance over model photographs to help people practice traditional drawing-by-observation techniques. The drawing literature describes a number of techniques to support this task and help people gain consciousness of the shapes in a scene and their relationships. We compile these techniques and derive a set of construction lines that we automatically extract from a model photograph. We then display these lines over the model to guide its manual reproduction by the user on the drawing canvas. Finally, we use shape-matching to register the user's sketch with the model guides. We use this registration to provide corrective feedback to the user. Our user studies show that automatically extracted construction lines can help users draw more accurately. Furthermore, users report that guidance and corrective feedback help them better understand how to draw.

Keywords: interactive drawing, pen-based interfaces, shape matching

Type de document: Communication dans un congrès

Domaine: Informatique [cs] / Synthèse d’image et réalité virtuelle [cs.GR]

https://hal.inria.fr/hal-00840853

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Soumis le : mardi 16 juillet 2013 - 09:25:55
Dernière modification le : mercredi 16 septembre 2020 - 17:06:35
Archivage à long terme le : jeudi 17 octobre 2013 - 04:14:59

FICHIERS

Visionneuse

identifiants

• HAL Id: hal-00840853, version 2

Voir les fichiers annexes