

PhotoModeler



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Motivation

- Traditional 3D modelling techniques
 - AutoCAD, 3DS MAX, ...
- Photogrammetry
 - Method for 3D model reconstruction from a set of images
 - GIS



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What Is PhotoModeler ?

- Extracts measurements and 3d models from photographs
- Uses photogrammetry
- Input device – camera, scanner
- Result can be exported to CAD systems

- Capabilities
 - Import many picture formats
 - Export to 3ds, DXF, VRML 2.0
 - Texture handling
 - Intuitive user interface



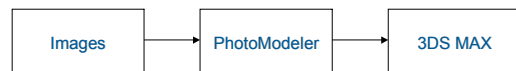
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What Is It Good For?

- Good first step modeling tool
 - Keeps proportions
 - Handles many details



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How To

- Get suitable photographs
- Import to photomodeler
- Mark points
- Make references
- Create faces
- Compute model
- Repeat until model finished



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Get Suitable Photographs

- Model quality depends heavily on the quality of photos
- Good camera angles
- Take at least 3 photographs
- Get good horizontal and vertical separation
- Get good photograph overlap
- Take many pictures, use only those needed
- Measure the distance between 2 points



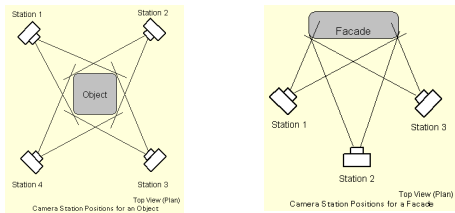
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Good Camera Angles

- Take photographs with good angular separation (close to 90°)
- Do not take all photographs with similar points of view
- Take at least 3 photographs

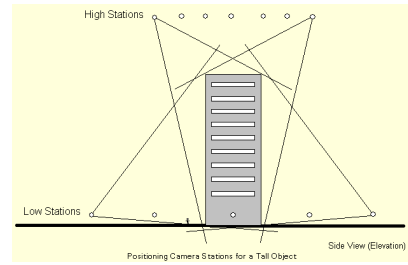


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Get Good Horizontal and Vertical Separation

- Camera stations do not need to be at one level

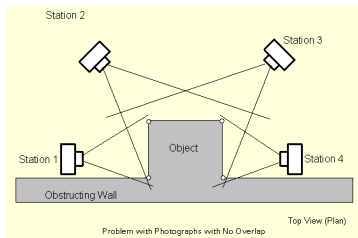


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Get Good Photograph Overlap

- PhotoModeler needs points marked in two or more photographs
- Photographs taken side by side should contain many of the same object features and points

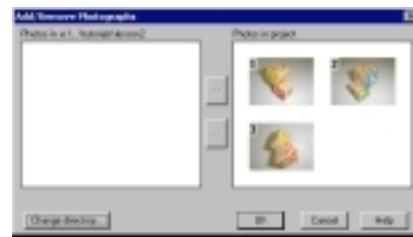


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Working With PhotoModeler

- Import photographs

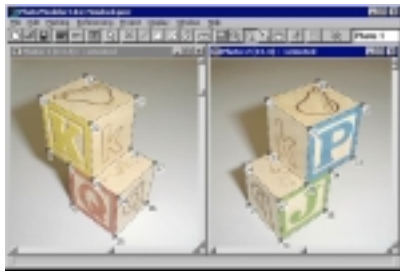


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Working With PhotoModeler

- Mark points, reference points



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Working With PhotoModeler

- Built in model preview



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Results

- Tatra 2-603
 - Photos supplied by Ondrej Ertl, Tatraklub SK



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Results

- PhotoModeler preview
 - Proportions in each direction are kept



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Results

- Final VRML model
 - www.sweb.cz/drracer

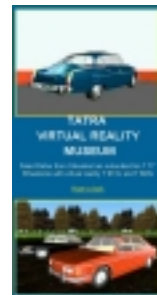


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Results

- www.tatraklub.sk
- www.tatraworld.nl



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Thank You
for Your attention
Questions ?



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