# Direct Sparse Odometry

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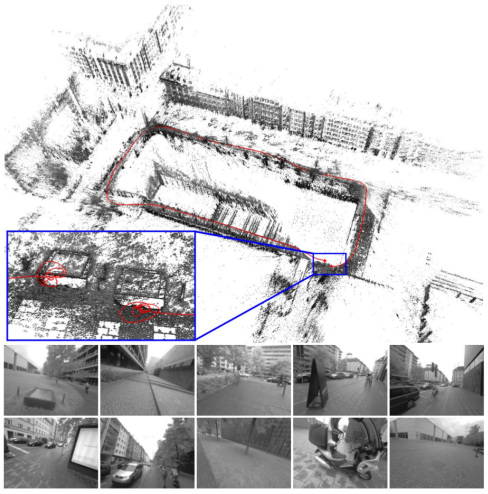

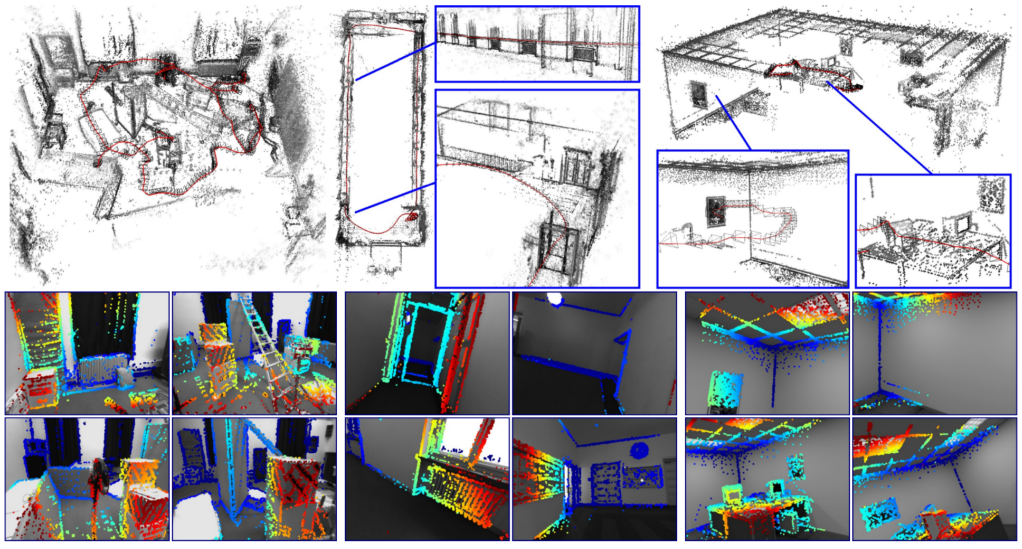

- The direct and sparse formulation for monocular visual odometry
- A fully direct probabilistic model with joint optimization of all model parameters, including camera poses, camera intrinsics, and geometry parameters (inverse depth)
- Evaluating the photometric error for each point over a small neighbourhood of pixels
- Real-time by omitting the smoothness prior and sampling pixels evenly throughout the images instead
- No keypoint detectors or descriptors
- Integrating a full photometric calibration
- Evaluated on three different datasets comprising several hours of video
- Comparison of direct to indirect approach: less robust to geometric noise, but superior accuracy on well-calibrated data