Ceres Functions

Using Ceres, the function $f(\cdot)$ can be written as a plain C++ function and be automatically differentiated for computing e.g., the Jacobian matrix necessary for the optimization process.

```
1  struct Residual
2  {
3      template <typename T>
4      bool operator()(const T * const cam, const T * const point, T *residual)
           const
5      {
6          T p[3];
7          ceres::AngleAxisRotatePoint(cam, point, p); // Rotate.
8          p[0] += c.x; p[1] += c.y; p[2] += c.z;       // Translate.
9          T xp = -p[0] / p[2], yp = -p[1] / p[2];      // Perspective correction.
10         residual[0] = cam[3] * xp - p_im.x;          // Compute residuals.
11         residual[1] = cam[3] * yp - p_im.y;
12         return true;
13     }
14     cv::Point3d c;
15     cv::Point2d p_im;
16 };
```