

**Tenttiinlukuohje/Guide on reading for the exam**

Tenttialue, kappaleet 6 - 11 kirjasta Trucco & Verri: Introductory Techniques for 3-D vision, are required in the exam. Eri menetelmien periaate on tärkeää ymmärtää, numeeristen algoritmien detaljeja ei vaadita. Kuitenkin ottaen huomioon alla listatut tarkennukset.

Scope of the exam, the chapters 6 - 11 of the book: Trucco & Verri: Introductory Techniques for 3-D vision, are required in the exam. The principles of different methods should be understood, the details of numerical algorithm are not important. Eri menetelmien periaate on tärkeää ymmärtää, numeeristen algoritmien detaljeja ei vaadita. However, take into account the notes listed below.

Alla listatuista luvuista ei vaadita laskennallisten algoritmien kuten SVD yksityiskohtia, yritäkää ymmärtää periaatteet.

In the sections listed below, the details of numerical algorithms like SVD are not required, try to understand the principles.

**6 Camera Calibration**

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6.2 Direct Parameter Calibration 125

6.3 Camera Parameters from the Projection Matrix 132

**7 Stereopsis**

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7.3.3 The Essential Matrix,  $E$ , 152D7.3.4 The Fundamental Matrix,  $T$ , 1547.3.5 Computing  $E$  and  $F$ : The Eight-point Algorithm, 155

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7.4.1 Reconstruction by Triangulation, 162

7.4.2 Reconstruction up to a Scale Factor, 164

7.4.3 Reconstruction up to a Projective Transformation, 166

**8 Motion**

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8.5.1 3-D Motion and Structure from a Sparse Motion Field, 203

8.5.2 3-D Motion and Structure from a Dense Motion Field, 208

**9 Shape from Single-image Cues**

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9.2.1 The Reflectance Map, 221

Ei optofysiikan detaljeja

9.2.2 The Fundamental Equation, 223

No details of optophysics

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9.4 A Variational Method for Shape from Shading 229

**10 Recognition**

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10.3 Invariants 255

Kurssin ulkopuolella/ Outside the scope

**11 Locating Objects in Space**

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11.3 Matching from Range Data 294

Kurssin ulkopuolella/ Outside the scope