

RETEO

- PS (SO)
- lubkis

Kvalita

$(x, y, z, t, g, b, \alpha) \in \mathbb{R}^7$
 max. understanding
 \$, SEO, počet parost, ... UX... FUNOLOGY

FINAL Dec 11³⁰ 11-11

Spajanie bodov, graph drawing: 2D (Delunayna t.)

Jednoducha animacia v 2D, zapis matricami

Paralelna simulacia (SIR data)

Lokalne osvetlenie v matrici

Spacovanie bodov

Alg. strategie

- iteracia mapy, rekonstrukcia
- Odsekni a hľadaj mapu
- Dualita, mapy, paralelna simulacia
- Sostroj mapu, z-buffer
- miera bodov (locus), DT, VD
- Rôzdetva paramy, mapu m', $t_4 = (t_3 + t_2 + t_1) / mod 7$

$\in \{c, d\}$

PG-2 VISUAL

modelovanie = obrazovnice (display) CITE

Symb. MODEL: VSRP, CH, CPU, DISPEJ

VISUAL IMAGE: VSRP, CH, CPU

Symb. SOUND: MIDI, MP3

MPEG-4

data zberomica (data bus) ASCII, SVG, VRML, GIF, .AVI, MP4

BMP (pixels), RAW, JPG, PNG, GIF

photo network 50%

GUI: [kap1, Ru], [kap20]

OPERATOR

AI (AI) GRAPH SYSTEMU

prizyk usicka, lineary splajny

aplikacia programator njoqir

PG2 - FORMÁT

MODEL: TXT (ASCII, UTF-8), 2-bit, 16-bit, IS2022, UNICODÉ, UTF-8

TEXT (POSITION, 'ABC'), INVENTS, ASCII, SIR

OPRA: RAW, BMP, JPG (JOINT PHOTOGRAPHER'S EXPERT GROUP), KOMPRESIA, DISCRETE FOURIER (COSINE) TRANSFORM, IMG → DUAL, RLE (RUN LENGTH ENCODING)

PHOTOREALISM... BELIEVABILITY

50% PHOTO RENDER

8D: $(x, y, z, t, r, g, b, \alpha)$

PROCEDURAL / P4 IV??

DECLARATIVE / SVG 2D

IMPLEMENTATION: W3CSCHOOLS, G-SEARCH: SVG GLOBE, NAPR. FULLEREN

PERCEPČNÁ KOGNITIVA (VO VR BELIEVABILITY)

IS, IS, URML, X3D, 3D, CSO, SPHERE, CONE, BOX, TEXT, CYLINDER, INDEXED FACE SET

Tretia tabula PG2, suradnicove systémy, PREMO pipeline, graf. objekt, aj MMObjekt, jednoduché modely, Ruzicky, VRML 6 typov, CSG (otazka na MID)

PG2,3

Geaf objekt, podmnožina E^2, E^3 (geom. masiv/support) + atribúty, mapa farba

Suradnicové systémy v PG: I. GEOMETRIE

Normálne (World Coord), Normalizované (MDC, 1000^{100})

3D: Kamerové súradnice (Camera), (x, y, z, t)

MODELING TRANSF. T_m , VIEWING T_v , ANIMÁCIA

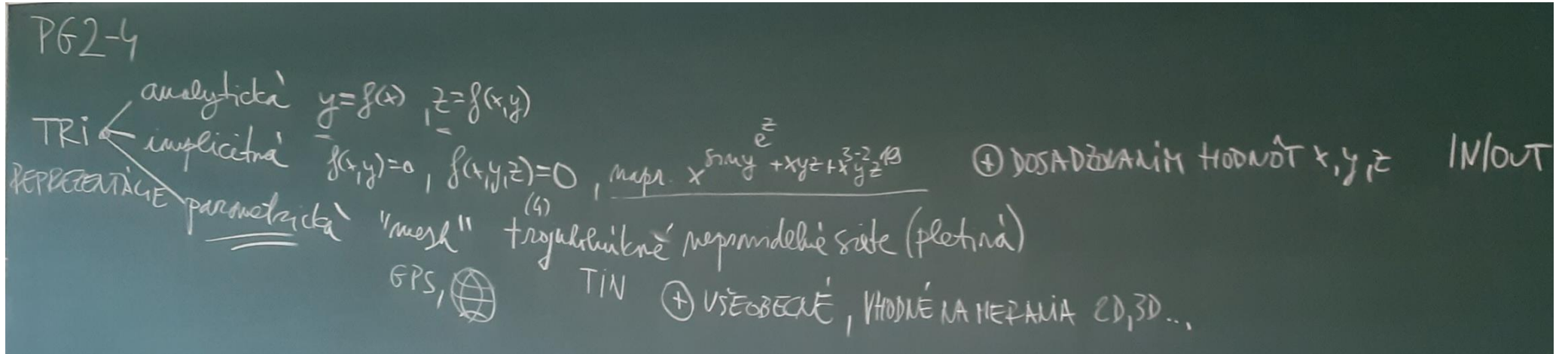
PREMO 5 SÚR SYSTÉMOV: LOCALNE ORIENT, GLOBálne SCÉLA graf. scény, KAMERA

LOGICKE SÚRADNICE, FARBA DÚHT, ZARIADENIE FYZICKE

VIEWPORT Z^2 , KONJEKCIA $[P]$, PREZENTÁCIA

JEDNODUCHÉ MODELY: 1. POKRYT OBLAK BODOV, 2. TELESO TRANSPARENTNÉ POTIAČNÉ "PROFIL", 3. CSG-STRM

PRESENTATION ENVIRONMENT FOR MULTIMEDIA OBJECTS: CSG Constructive Solid Geometry, [0..255] GRATUELEC, PRÁTOVAME, RADIOMETRIE, KINEMATIK, VERITEĽNOSŤ (BELIEVABILITY), GRAF. OBJEKT



PG2/5 TEXTURED TRIANGLE

$[R, S, P, M, A, K, C, O, S, V, P, C, - \dot{Z}, \dot{A}, R, A]$ $m_1 (u_1, v_1)$ $m_2 (u_2, v_2)$ $m_3 (u_3, v_3)$

$(x, y, z) + u, v$ (TEXTURE COORDINATES)

PARAMETRIZÁCIA ("olepenie")

2D $(0,0)$ $(1,1)$ $(0,0)$ $(1,1)$ $(0,0)$ $(1,1)$ $(0,0)$ $(1,1)$

3D CUBE MAP 6 SIDES

SENSING (JPG..)

PROCEDURAL TEXTURING

SEL (SEAM)

SPHERE MAP

CYLINDER 360°

PRAX

VISIBILITY ILLUMINATION

ART GALERIE

BOŽEK

ČASŤ

CUBE

SPHERE

CYLINDER

PROJECTED (x, y, z)

POMOCNÉ OBJEKTY

AFINNÉ 2D $\begin{pmatrix} u & v \\ x & y \\ 1 & 1 \end{pmatrix} \cdot \begin{pmatrix} 1 & 1 & 0 \\ 1 & 0 & 1 \\ 0 & 1 & 1 \end{pmatrix} \cdot inv'$

PROJEKCIA 3D "KASNIETOME"

OBLAK BODOV → TRIANGLE SOUP

POLYGON TRIANGULATION

COLORS, map $(R, G, B) = (L_x \downarrow \bmod 128, L_y \downarrow \bmod 64, L_z \downarrow \bmod 32)$

QUALITY: EDGES, Δ , map. MINIMUM LENGTH, Δ

DUALITY VORONOI ↔ DT

VTKŤASÍ BOJNOU

EHPTY CIRCLE

GREEDY GT + DT

Sort

EQUICAT. CEN

PG2/5 TEXTURED TRIANGLE

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PG2-6

EXPRESSIVE RENDERING

1. NELEJ DÁT 3 SCHEMATY 2. TYPY ZAGRA

MODEL BASED RENDERING (PRAX: OBLAK BODOV - MESH + TEXTUREY - OBRÁZOK)

PHOTO-REALISM

IBR (NON-PHOTO.)

NOVÉ PROBLÉMY (COMPUTER VISION, IMAGE PROC)

1. NEROVNOMERNOSŤ OSVETLENIA

2. ROZPOR (MAPY Z PŘEKRÝVŮ)

3. CHYBA (KMERZ) ŠUM, CHYBA PIXEL...

4. FOURIER "EXPRESSIVE" < DETAILS > MACRO

5. STITCHING "ZOŠŤIVANIE" MCDP, HCSOLAME: MEDIAN

2D POHĽADY → PANORAMA > 110° → 3D MODEL

VIDEME: MONO-STEREO-AMBIENT-(PERIFERNE)

INTERPOLÁCIA: NAJBLIŽÍ SUSED, LIN., BILIN., BIKUBIC.

1 MIPLEVEL 2 4 9

0 NPR

ŠKÁLOVANIE

ROZOSTRIE/ZAOSTRIE

"TOPEANIE VOŠEK"

"MINIMALNÉ FILTRIC" [MENEJ DÁT]

3x3

ALT. PRIEMER MEDIAN

W_i = 1

1/36 1/9 1/36

1/9 1/9 1/9

1/36 1/9 1/36

PIADOK PIXEL

DETAILY [MENEJ DÁT]

FARBA PLOŠKY NA OBJEKTE [+ LESK] [- TIEN] [+ ...] ? HIL...

ESTE MAR: STREET VIEW

⊕ PHOTO-REALISM

⊖ POKYB KAMERY

PG2-6

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Siedma tabula PG2, 40 minut **MIDterm**: informaticka otazka, 3D modelovacia otazka, 2D triangulacna otazka, vizualizacna otazka

Dohoda o obsahu testu na pondelok od 8.10 na M-120, po 10 minút: