

EA UPB LAB - Diplomă - 2015-2016

Propuneri de proiecte de diplomă

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Editor de imagini

Editorul va avea următoarele funcționalități:

- Load image: formate suportate: bmp, png, jpeg, gif. Indexed & truecolor. Pentru indexed: load/save palette.
- Save image
- Scale (constrained/non-constrained)
- Brush pen, dither
- Multi-layer support
- Hue/Saturation/Brightness
- Rectangle selection
- Wand selection
- Solid shapes: circle, elipse, rectangle, square

Physics Playground

O scena 3D in care se pot plasa mai multe tipuri de obiecte: bile, cuburi, piramide, diedre etc.

Fiecarui obiect i se pot define anumiti parametri: masa, coeficient de frecare, tip material (rigid/elastic) etc.

Obiectele se pot misca cu mouse-ul.

Obiectele se pot arunca, impinge, trage, astfel incat sa interactioneze cu restul obiectelor intr-un mod cat mai natural (adica correct) din punct de vedere fizic.

Ar trebui sa pot construi niste plane inclinate, sa dau drumu la o bila la vale, bila apoi sa se urce pe o balanta, sa o incline etc.

Ideal ar fi sa se poata disabla anumite fenomene in timp real (de ex daca vreau sa vad cum s-ar petrece o ciocnire in vid sau fara frecari sau cu acceleratie gravitationala de pe Luna etc.)

A Night Vision System



The purpose is to build a system which will offer non-supervised corrections to images (or videos) captured with a (mobile device) camera. The main purpose is to offer automatic correction in poor lighting conditions. The proposed diploma project will decompose the problem in the following correction stages/components:

- A noise reduction component: several noise reduction approaches will be tested and compared with an original research (DifferenceGatherer);
- An optimal contrast enhancement component: several contrast equalizer approaches will be tested and compared with an original research (MaxOnMinVariance);
- An edge information detection and amplifier component: several edge detection approaches will be tested and compared with an original research (GeneralizedEdge).

Aspects to be considered include:

- Enhanced image quality
- Software design quality
- Mathematical complexity
- Responsiveness
- Runtime memory footprint.

Available for a team of 3 students