OMICS International
conferenceseries.com **SciTechnol**

2ⁿᵈ International Conference on
Computer Graphics & Animation

September 21-22, 2015   San Antonio, USA

Image acquisition and processing for precision farming applications

Frédéric Cointault
Agrosup Dijon, France

Initially developed for technical industrial sectors such as medicine or aeronautics, imaging technics are more and more used since 30 years in agriculture and viticulture. The development of acquisition tool and the decreasing of the calculation time allowed using imagery in laboratory under controlled conditions. At the beginning of the 90's, the concept of Precision Farming has been developed in the USA, considering a field as a heterogeneous area needing different input in terms of fertiliser or protection product. In the same time, the aperture of the GPS system for civil applications has allowed the development of remote sensing domain. Combining GPS information and imagery conducted also to the emergence of proxy-detection applications, in agriculture and viticulture domains, in order to optimize crop management. A localized crop management needs the use of new technologies such as computing, electronics and imaging, and the conception of a proxy-detection system is motivated by the need of better resolution, precision, temporality and lower cost, compared to remote sensing. The use of computer vision techniques allows obtaining this information automatically with objective measurements compared with visual or manual acquisition. The main applications covered by the computer vision in agriculture are tied to the crop characterization (biomass estimation, leaf area, volume, height of the crop, disease determination …), the aerial or root phenotyping in the fields or in specific platforms and the understanding of spraying and spreading processes. This presentation will explain the different imaging systems used to characterize the previous parameters, in 2D or 3D. It will also give some details on the dedicated image processing methods developed, related to motion estimation, focus information, pattern recognition and multi –hyper spectral data.

Frederic.cointault@agrosupdijon.fr

Facial animation: Phoneme's be gone

David M Breaux
Sr. Animator, Bioware, USA

Any serious animator worth their weight in frames has seen Preston Blair's mouth expressions or heard of using phonemes for animating characters' lip sync. In its day, this was quite an effective way for animators to break down dialogue into something manageable. The problem is hand drawn animation has never needed to been interested in recreating perfectly believable lip-sync, after all the starting point of traditional hand drawn animation is already several steps away from realism. This thinking however has carried over into CG animation in a couple of ways. Often character rigs will have predefined shapes for a character which rightful so can be art directed which is often a desired trait especially if there is a large animation team or a specific thing a character is known for. However, these confine you to that shape, and create more work for riggers and modelers. Animators also loose a bit of control by the nature of this system. This system is also used often in games to automate facial animation since they often have a lot more dialogue to address than most feature films. However, it produces over-chattery results hurting the visuals and even kicking the player out of their suspension of disbelief. I am proposing a different method, now that CG offers us the ability for better or worse to infinitely tweak our animation to achieve the most subtle of motion. This is a technique I've developed over my 16+ year animating characters and creatures who needed to speak dialogue and it involves a deeper understanding how humans speak, what our mouths are capable of doing muscular wise, and how we perceive what someone is saying in a visual sense. It also takes some burden off the modelers and riggers, and simplifies controls for animators while increasing the control it affords them. I didn't invent this, nature did. I've just refined how I think about it and distilled it down into a description that I've never heard explained this way.

dbreaux@siliconriot.com

J Comput Eng Inf Technol 2015
ISSN: 2324-9307, JCEIT

Computer Graphics 2015
September 21-22, 2015

Volume 4 Issue 2

Page 105