3D Animations and Interactive AR/VR of Animal Development and Evolution: Position for a Computer Graphics Scientist at the University of Geneva (Switzerland) - https://www.lanevol.org/jobs

In the context of a multidisciplinary study combining mathematical modelling, physics-based numerical simulations, and biology, we offer one position for an outstanding, highly motivated, and creative **computer scientist** with experience in **3D animation** and **Virtual/ Augmented Reality** to produce ultra-realistic interactive applications and educational software for teaching recently-discovered **physical and biological processes generating Life's complexity and diversity**. These developments, including on the **Microsoft HoloLens** and **htc VIVE** platforms, will be targeted to all levels of education and outreach, from the general public to university students to the physics-of-biology academic research community. The successful candidate will join a **multidisciplinary team** of physicists, mathematicians, computer scientists and biologists, and will participate to a research program aimed at uncovering the self-organizational processes that generate complexity during morphogenesis and evolution. Good written and verbal communication skills in the English language are mandatory.

Candidates must have a master's degree in computer science and strong expertise in:

- **3D modeling, point cloud and mesh processing, surface reconstruction, texturing and animation (Autodesk Maya);**
- **C/C++ and GPU programming and optimization of 3D graphics rendering.**
- **Development/optimization of ultra-realistic AR/VR graphics in Unreal Engine / Unity**

Interests and skills in artificial life, evolutionary algorithms, deep-learning / neural networks, image processing/analysis, pattern recognition and robotics (see https://youtu.be/EOBD8reW4dw) are useful additional assets.

Candidates must have a master's degree in computer science. The position is available at the level of a **PhD student position or** at the level of **Research Associate** (requiring at least 3 years of professional experience **or** a PhD degree).

The University of Geneva (UNIGE) is world-renowned for its research and is among the top 1% best universities in the world. Research Scientists and PhD students are remunerated according to the standards of UNIGE, which are very generous when compared to other international programs.

Geneva is an international city occupying a privileged geographical situation with its beautiful lake and the close-by Alps.

Candidates must send their application — **in the form of a single PDF file including** a brief letter of interest, a CV, as well as contact information (not support letters) of two to three persons of reference — to: Prof. Michel Milinkovitch (michel.Milinkovitch@unige.ch).

References: *Locally-curved geometry generates bending cracks in the African elephant skin* **Nature Communications 9** (2018) ; *A Living Mesoscopic Cellular Automaton Made of Skin Scales* **Nature 544: 173-179 (2017)** ; *Bifurcation Analysis of Reaction Diffusion Systems on Arbitrary Surfaces* **Bulletin of Mathematical Biology (2017)** ; *Photonic Crystals Cause Active Colour Change in Chameleons* **Nature Communications 6: 6368 (2015)** ; *R²OBBIE-3D, a Fast Robotic High-Resolution System for Quantitative Phenotyping of Surface Geometry and Colour-Texture* **PlosOne 10(6): e0126740 (2015)** ; *Crocodile Head Scales Are Not Developmental Units But Emerge from Physical Cracking.* **Science 339, 78-81 (2013)**.

The New York Times: Why Elephants Don't Shed Their Skin
The New York Times: A Lizard With Scales That Behave Like a Computer Simulation
The Washington Post: Scientists solve the mystery of where feathers, fur and scales come from

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