

# Global Summit and Expo on **Multimedia & Applications**

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## **Aesthetics of artist created vs. evolutionary-generated character animations**

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While the field of procedural content generation is growing, there has been some-what less work on developing procedural methods to animate these models. We present a physically-based technique for generating procedural animations for creating adaptive biped motions using evolutionary algorithms and Fourier series. Training fitness functions to create motions that meet artistic demands (style) that are able to automatically adapt to changing situations (e.g., character physical attributes, such as mass and size, and changing terrain). We evaluate our animations using a variety of situations to demonstrate the future real-world viability of our technique.

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## **Using context informed information infrastructures for improved situational awareness**

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Human operators when trying to understand the current state of a system must first perceive the relevant elements of data and then comprehend their meaning and significance, before anticipating what the implications of this system state are in terms of the actions required of them. Only then—with this situational awareness—can they make a decision about the system criticalities and have a better understanding of what action to take. While the study of situational awareness has its origins in military research, recent work has taken it out of the military zone and into social media, where a new field of data fusion explores patterns of influence, location, identity and interactions between individuals and groups. We intend to explore the advantages of an information fusion system in which the information infrastructure finds new ways to reflect upon its own state and new ways to express this state that provides a good fit to human communication and cognition processes. This interplay should then generate a better and more responsive human-computer symbiosis. It is anticipated that allowing the information infrastructure to reflect on its current context, dynamically sensing the environment, making a trust judgment in respect of that environment and communicating that judgment to a user should then generate a better and more responsive human-computer symbiosis leading to improved situation awareness. This, in turn, should generate better decision-making (although obviously individual and task factors can play a mediating effect).

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## **Notes:**