

# RECENT DEVELOPMENT AT AUDIOGAMING

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## ABSTRACT

AudioGaming is a young company dedicated to the development of creative sound design tools for film, video game and music. In this demo section, we will demonstrate our latest technologies in three aspects: music information retrieval, speech processing and sound design.

## 1. INTRODUCTION

Founded in 2009 in the south of France, AudioGaming is developing procedural audio synthesis technologies for the film and video game industry. We have set our vision on the notion of interactive time rather than real time. By changing the way sound designers use sound, AudioGaming is bringing a paradigm change with tools enabling direct computing of different types of sound with intuitive and semantic control over all main acoustic components as well as the time behavior of such generated sounds.

So far we have released four products dedicated to the synthesis of wind, rain, engine and footstep sounds with intuitive and interactive controls. In addition, speech processing technologies continue to be developed, focusing on automatic cleaning and refinement of dialog recordings for localization professionals. This year, AudioGaming expands its field to music focusing on groove extraction. In this demo section, we will demonstrate the latest development including rhythm extraction, our new sound design tools creation pipeline as well as currently available products for music, speech and sound.

## 2. MUSIC

For the music product line, we start by automatic drum loop transcription. We believe that this tool will allow creative processes for composition and performance. Acoustic drums will be the main target since they are better defined by their acoustic properties than electronic/synthesized drum sounds. Different from the usual three target components settings, we set the goal to identify up to 10 components: bass drum, snare drum/ring, three tom-toms, open/close

hi-hat, crash/ride symbols [2]. Considering the robustness and ease of use, we have reduced the output to five classes.

## 3. SPEECH

Localization professionals usually spend a lot of time cleaning dialogue recordings. Although recorded in acoustically controlled booth, the speakers introduce lip/breath noise, imperfect pronunciations and unequal dynamics. Automatic dialogue cleaning and adjustment is an undergoing research project at AudioGaming and we would like to demonstrate some preliminary results.

## 4. SOUNDS

Apart from music and speech, procedural audio [1] is what passionates us particularly at AudioGaming. In addition to the four audio synthesis plugins: AudioWind, AudioRain, AudioMotors and AudioSteps, we will also give sneak previews of upcoming products as well as a special focus on our new R&D pipeline. With few steps we can switch from graphical audio programming to full-fledged professional plug-ins.

## 5. PERSPECTIVES

Considering the variety of sounds we hear on a daily basis, this universe of sound remains largely unexplored. Thanks to the information retrieval technologies developed for music and speech, we can study all other sounds based on the same principles. Harmonic sounds like engine sounds and animal sounds, for instance, can be analyzed/synthesized based on signal models developed for music and speech. Non-harmonic sounds like wind noise and footsteps require further development of analysis/synthesis technologies for noise and transients. In the future, we will continue to provide unique and innovative solutions for music, speech and sounds focusing on these unexplored areas.

## 6. REFERENCES

- [1] A. Farnell. *Designing Sound*. The MIT Press, 2010.
- [2] C. De Andrade Scatolini. *Audiogroove: Transcription automatique de boucles rythmiques*. Internship report, Telecom ParisTech, 2014.



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