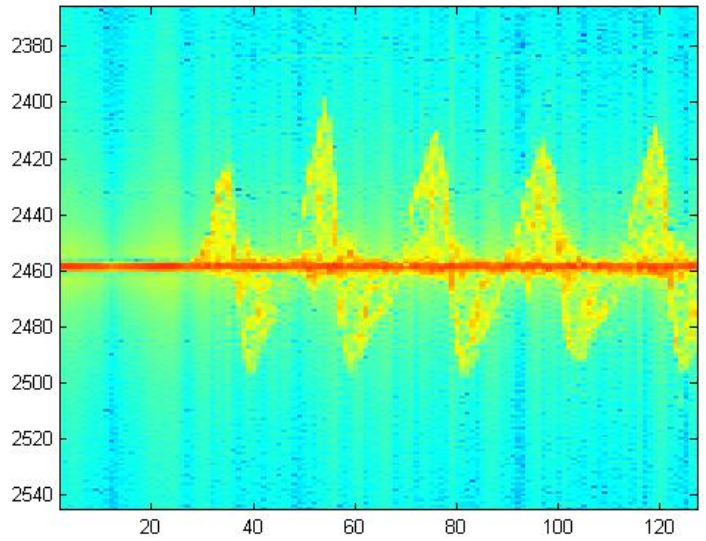
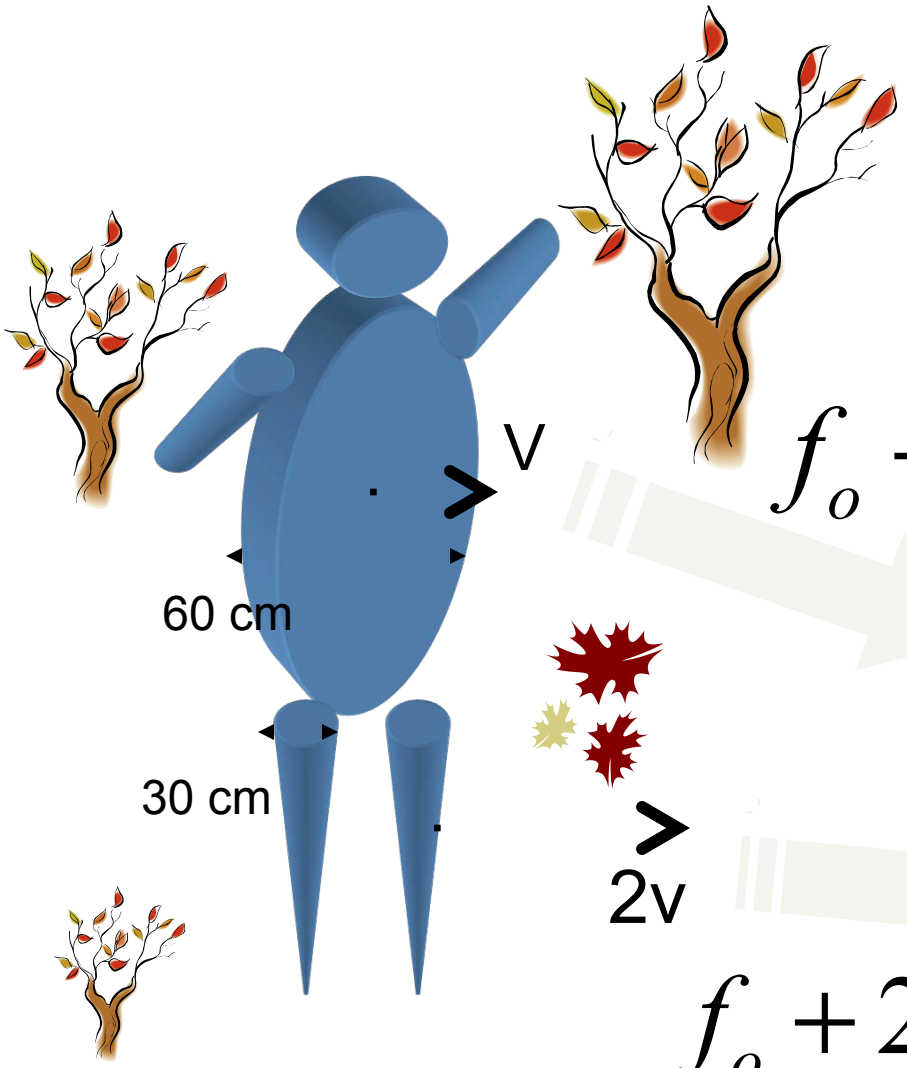
acoustic system

active acoustics



arm swings

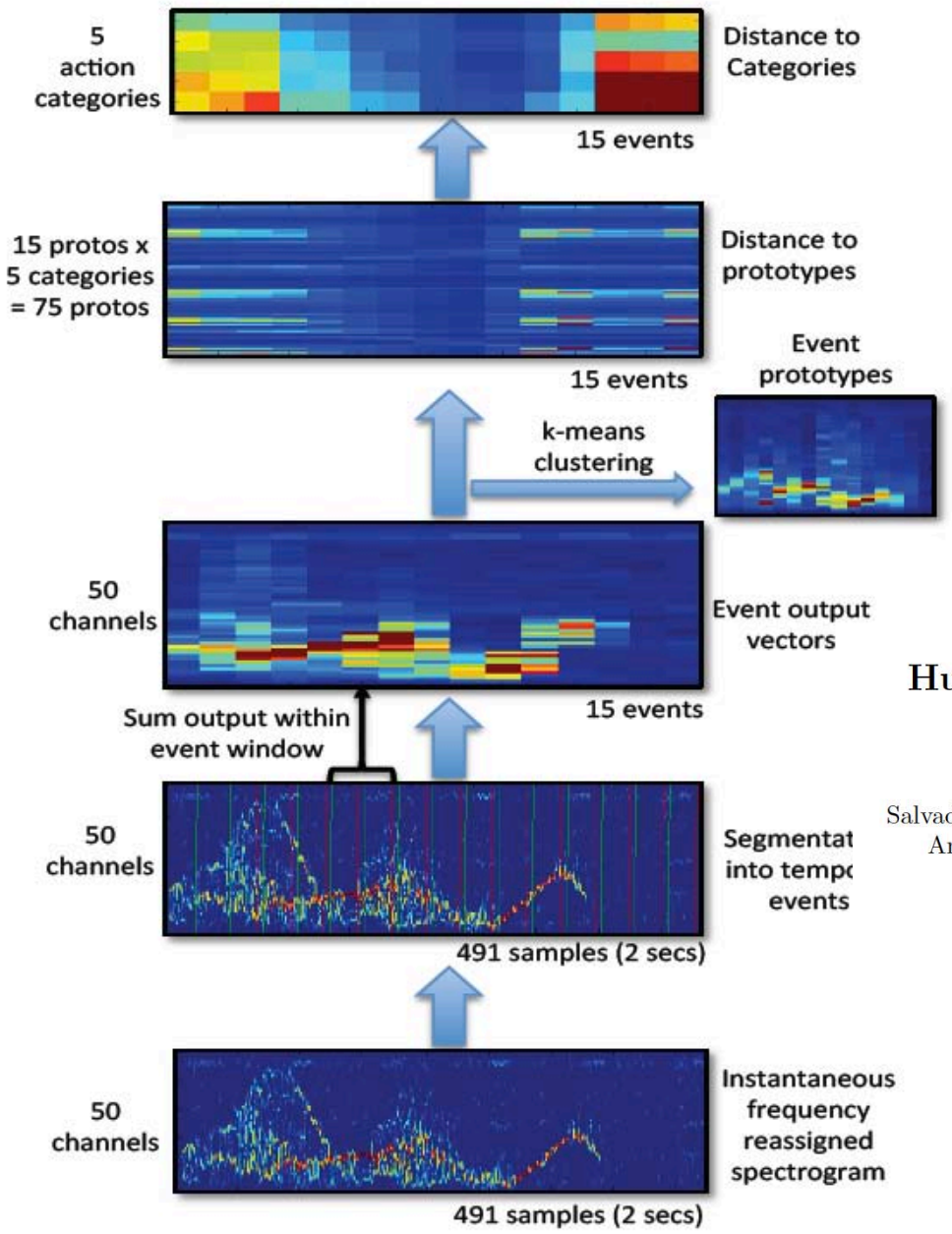


$f_o + \Delta f$

f_o

$f_o + 2\Delta f$

Transducer



Human action categorization using ultrasound micro-Doppler signatures

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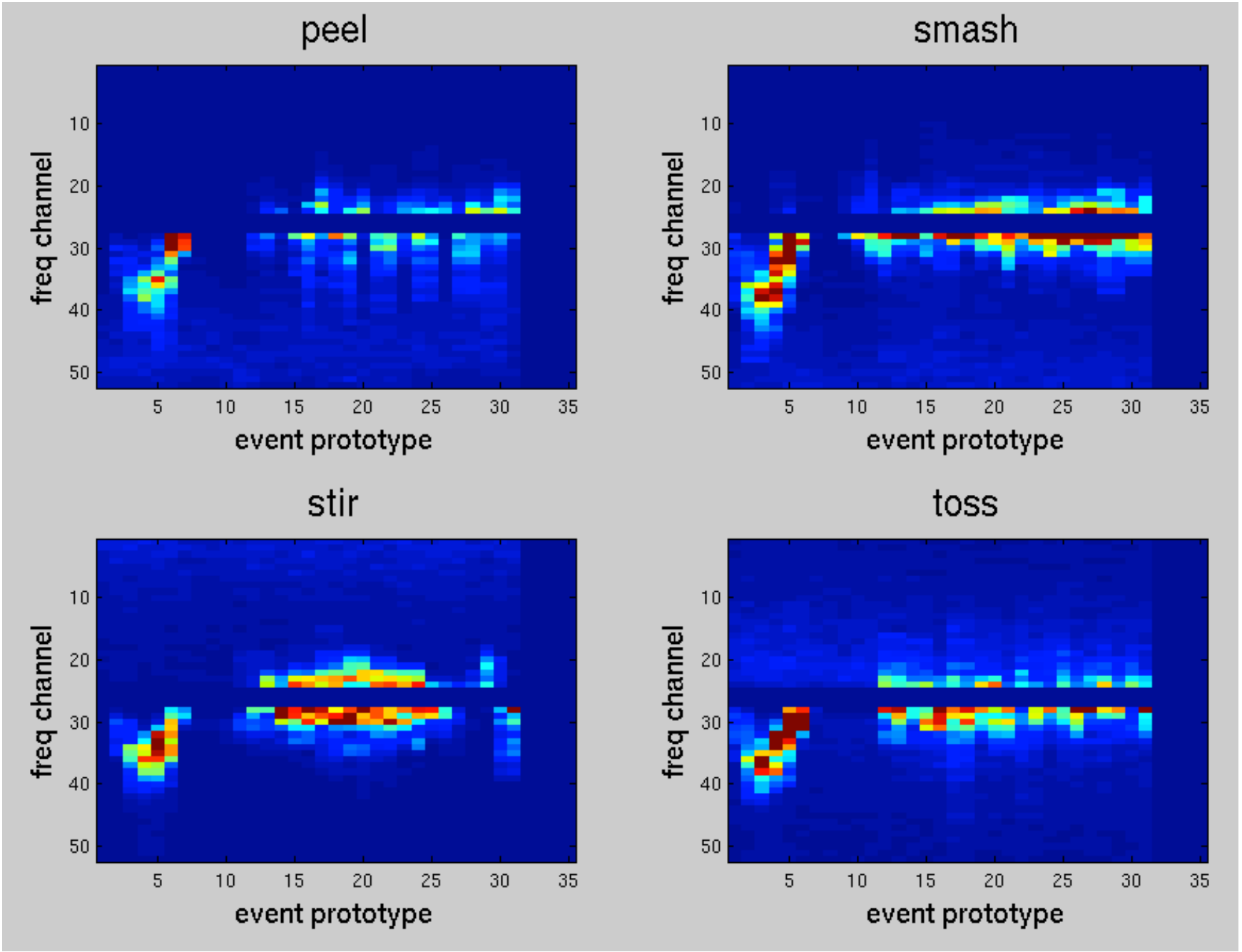
peel
smash
stir
toss
freq channel
event prototype
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SCANDLE

SOUNDING OUT THE WORLD

How much can we learn about what is going on in the world around us simply by listening?

Living beings constantly give sonic clues about their presence as they move, breathe and interact with the world around them. Sounds also bounce off other objects in the environment; a source of further information about movements and patterns of behaviour, and the environmental surroundings. Can we detect and perhaps tell something of the mindset of living beings solely through sounds generated or modulated by their actions in and interactions with the environment?

The ultimate goal of SCANDLE is to engineer a real-time system that uses the sounds generated by living beings, as well as the sounds they reflect, to decide whether an animate being is nearby, where it is, and what it is doing.

In this project, we draw on biological inspiration in the design and optimisation of a computational processing architecture and acoustic sensors, emulating the

SCANDLE is also making advances on significant engineering problems, such as optimising the design of computing architectures and solving difficult issues associated with massively parallel computation. Again, we draw on biology to understand the constraints and costs associated with design choices in the brain. The net result is a methodology for determining the architecture of specialised embedded systems and for compiling large-scale brain models for real-time operation on these systems.

http://scandle.eu/