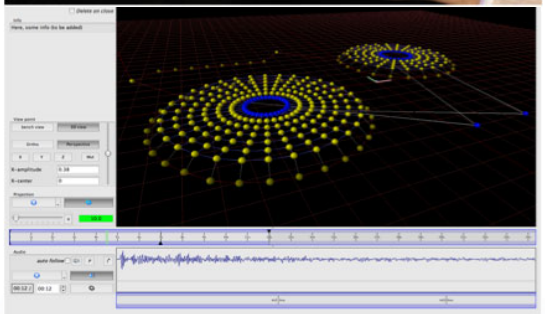

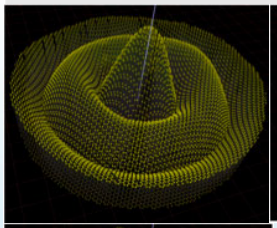

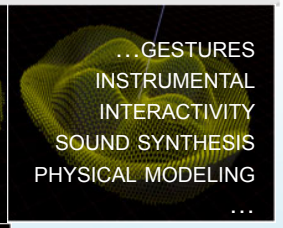

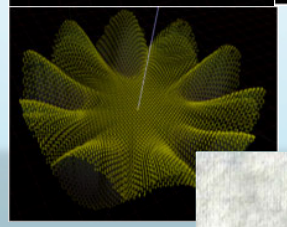

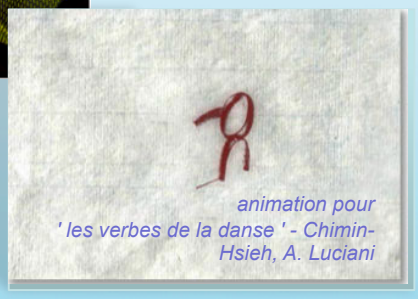

animation pour ' les verbes de la danse ' - Chimin-Hsieh, A. Luciani

Media and communication technologies have introduced powerful practical and conceptual tools for the Arts, and they have opened up crucial new dimensions to explore art.

Mutation of mediums, means of representation and knowledge transmission, interaction by means of our gestures and senses, the invention of new tools… deeply change the nature, the shape, the contents of artworks, and the way broadcasting and sharing them. Furthermore, it is the process of their creation and the deployment of creativity itself that are changing.

It is crucial that we provide ourselves with the means to play a part in this change.
Hence, the engineer, the researcher and the artist must be involved in it together.
And since new technologies allow for such perspectives, the domains of technological invention, scientific discovery and artistic creation must be able to converge in a same point, within a same 'workshop', and why not be embodied within a same person.

The AST Master Degree is a high-ranked multi-disciplinary course open to students holding a degree in engineering sciences (computer science, signal processing, automatic control engineering, modeling and simulation, acoustics, computer graphics…), willing to address arts in the context of new technologies.

This course aims at giving them a deep understanding of the concepts as well as a strong knowledge of advanced technologies for sound and musical creation, image art, art of visual motion and gesture art, multisensory interactivity…

Grenoble INP phelma

Master of Research 2015 – 2016

AST

Art, Science, Technology

Director of studies
Claude Cadoz
ACROE & ICA laboratory
Ministère de la culture, Grenoble INP
claude.cadoz@imag.fr
Secretary and Application
Ophélie Greco
ophelie.greco@phelma.grenoble-inp.fr
Website
http://phelma.grenoble-inp.fr/master-ast

Master IC2A
Ingénierie de la Cognition, de la Création et des Apprentissages
(Engineering for Cognition, Creation and Learning)
Grenoble Institute of Technology
— Grenoble University

CURRICULUM

1ST SEMESTER
THEORY AND PRATCICE (WORKSHOPS) - (30 ECTS)

Core curriculum	**16 ects**	h
Technologies and Processes of Musical Creation	3	28
Technologies of Dynamic Visual Arts	3	28
Interactive Virtual Reality	3	28
Analysis and Perception of Multimodal Scenes	3	18
Advanced Programming for Interactive Creation	1,5	16
Genetic algorithms for Image and Movement Synthesis	1	12
Mathematical Methods for Musical Creation	1	12
Color Synthesis by Modeling of Photonic Interaction with Matter	0,5	6

Artwork project Musical, Visual and Multisensory Creation	**2 ects**	48

Upgrading classes (1 choice) - 3 ects	**3 ects**	
Signal Processing	3	48
Computer Science - Programming - Algorithms	3	48

plateforme AST Grenoble INP

Optional classes (2 choices) — 6 ects	**6 ects**	h
Cognitive Psychology	3	24
Models for Human-Computer Interaction	3	24
Artificial Intelligence, Artificial Life and Cognition	3	24
Musicology	3	24
Aesthetics and Philosophy of Visual Arts	3	24
Language — 3 ects	**3 ects**	24
English or French		

2ND SEMESTER (March—June)
RESEARCH INTERNSHIP IN A LABORATORY OR IN A COMPANY — (30 ECTS)

The AST Curriculum includes a 4 to 6 months training period (full time) in a research team, starting in **February**. In the first semester, each student chooses a subject from the Master's Degree partners list.
At the end of the training period, the students have to write a report describing their project. This work is evaluated during a public Master's Thesis Defense.

…SOME PARTNERS LABS, RESEARCH AND CREATION CENTERS

ACROE (Grenoble)
ICA Laboratory (Grenoble)
GIPSA-lab (Grenoble)
IRCAM (Paris)
IRIT (Toulouse)
GMEM (Marseille)
CNRS-LIMSI (Orsay)
Lab. IDMIL, CIRMMT, Univ. McGill, Montréal (Canada)
Institute for Systems and Computer Engineering of Porto (Portugal)
LIAM
MacGill Universityv(Canada)
University of Plymouth (UK)
Cardiff Metropolitan University(UK)
Aalborg University - Denmark
…

real-time multisensory simulation platform

AFTER THE MASTERS' DEGREE…

RESEARCH : Thesis in one of the partners laboratories or in a laboratory working on similar topics.

Some examples of thesis :

A. Novello : '*Perceptual and algorithmic evaluation of inter-song similarity in Western popular music*', MEST-CT & Philips Research Lab. Eindhoven, 2009.
M. Evrard : ' *Mimesis : Interactive interface for mass-interaction modeling*', Grenoble INP 2009.
M. Bernays : ' *Expression and gestural control of the piano timbre* ' (dir. Caroline Traube) University of Montréal, Musicology department.
A. Allaoui : ' *Processus de conception pour la modélisation interactive de modèles physiques particulaires 3D complexes dans l'environnement MIMESIS* ', U. Grenoble 2010.
F. Poyer : '*Modélisation en CORDIS_ANIMA de structures à oscillations entretenues pour la synthèse de sons et de gestes'*, U. Grenoble 2010.
R. Loyet : *' Dynamic Sound Rendering of Complex Environments* ', Université C. Bernard – Lyon 2012.
J. Villeneuve : '*Mise en œuvre de méthodes de résolution du problème inverse dans le cadre de la synthèse sonore par modélisation physique masses- interactions* ', U. Grenoble 2013.
M. Christou : '*Enaction, interaction multisensorielle : théorie, technologie et expériences pour la performance artistique interactive'*, U. Grenoble 2014.

PROFESSIONAL SECTOR:

Cultural Art Centers for Creation
France: National Center for Creation (Lyon, Paris, Marseille…) *International:* ZKM (Karlsruhe, Allemagne)
Graduate Schools of Arts
France: EESI (Superior European School for Image) Angoulême – Poitiers
CNSMD (Lyon, Paris)
International : Cardiff School of Art and Design (UK)
Music Conservatories
France: Grenoble, Lyon …
International:
Turin Conservatory (Italy)
Cuneo Conservatory (Italy)
Companies of Engeneering Systems and Tools for Music, Image and Multimedia
…

pionniers M. Mathews, J. Chowning, J.-C. Risset