

Dr. Roberto Dillon – Curriculum Vitae

Born in Genoa (Italy) on 22nd March 1973

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Education:

- **Ph.D.** Degree in *Electrical and Computer Engineering* at the University of Genoa
Final Examination on 24th May 2004.
Ph.D. thesis: **"On the recognition of expressive intentions in music playing: a computational approach with experiments and applications"** focused on the development of software modules based on artificial intelligence and statistical methods, such as Hidden Markov Models and Decision Trees, to be applied to automatically recognizing, tracking and predicting expressivity in actual music playing.
- **Master** Degree in *Electrical Engineering* at the University of Genoa.
Final Examination on 22nd July 1999. Final Mark: 106 / 110.
Master Thesis: **"A Hybrid System for Music Composition and Performance"** focused on Artificial Intelligence and Music to develop a computer system able to compose and perform simple musical phrases following different emotional intentions.

Publications (including books, journals and refereed papers):

- **R.Dillon: "On the Way to Fun: an Emotion Based Approach to Successful Game Design", AKPeters, 2010**
- R.Dillon, Ng K.B., S.Rozner: *"The Music and Emotion Driven Game Engine: Ideas and Games"*, Proceedings CGAT '09, Singapore, pp.15-23, Research Publishing, 2009
- R.Dillon, G. Wong, R. Ang: *"Virtual Orchestra: an immersive computer game for fun and education"*, ACM International Conference Proceeding Series: Vol. 223 - CGIE 2006, pp.215-218
- R.Dillon: *"A Possible model for Predicting Listeners' Emotional Engagement"*, in "Lecture Notes in Computer Science", Volume 3902, pp.60-75, Springer, 2006.
- R.Dillon: *"An analysis and modeling of possible parameters for controlling emotional content in interactive audio"*, CyberGames - International Workshop on Games Research and Development, Singapore, pp.113-118, Pearson - Prentice Hall, 2005
- R.Dillon: *"Classifying musical performance by statistical analysis of audio cues"*, Journal of New Music Research, Vol.32, Issue n.3, 2003
- R.Dillon: *"A Statistical approach to expressive intention recognition in violin performances"*, Proceedings Stockholm Music Acoustic Conference (SMAC '03), 2003
- R.Dillon: *"Extracting audio cues in real time to understand musical expressiveness"*, Proceedings MOSART workshop on "Current Research Directions in Computer Music", Barcelona, 2001
- A.Camurri, R.Dillon, A.Saron: *"An experiment on analysis and synthesis of musical expressivity"*, proceedings CIM XIII, L'Aquila, 2000

Talks and lectures at game related conferences:

- R.Dillon: "Retro Games Exposed: Evergreen Hints and Tips to Design Fun Games", Korea Games Conference, Seoul, 2009
- R.Dillon: "Playing Games by playing music: the M-EDGE Project", Korea Games Conference, Seoul, 2008
- R.Dillon: "Using Emotions as an input medium for a new generation of Music Games", Game Convention Asia Conference, Singapore 2007

- R.Dillon: “A Virtual Orchestra Game for Introducing Children to Music”, Serious Games Summit, Washington D.C., 2006

Positions held:

- **Aug 2009- Present: Assistant Professor** at the Department of Computer Science/Game Software Production and Design, DigiPen Institute of Technology. Teaching different subjects (“Computer Environment”, “Game Project”, “Game History”, “Game Mechanics I” etc.) for the B.Sc. Degrees in Game Design and Real Time Interactive Simulations.
- **Jan 2007-Jul 2009: Lecturer** at the School of Interactive and Digital media (SIDM), Nanyang Polytechnic (Singapore). Taught different subjects ranging from Game Production to Sound Design. Besides lecturing, I had **producer/project lead** duties for projects such as
 - **M-EDGE** (Music-Emotion Driven Game Engine, fully funded by the National Research Foundation of Singapore under the grant NRF2007IDM-IDM002-015) for which I wrote and submitted the research proposal, designed the engine architecture and managed the team as **“Principal Investigator”** from August 2007 till July 2009.
- **Jan 2005- Dec 2006: Research Fellow** at Nanyang Technological University – NTU gameLAB (Singapore). Responsible for R&D on Serious games and other projects, including:
 - “Virtual Orchestra”, a serious/educational game for introducing children to music had a very good impact on the international press, including Singapore’s Straits Times (21st February 2006), the May/June 2006 issue of the British music magazine MUSO and ‘USA Today’ (31st October 2006).
 - Planned and developed a curriculum for the “Fundamentals of Game Design and Development” course on behalf of the Infocomm Development Authority of Singapore.
- **Jun 2000 – Dec 2005: Founder / Director** for the Callisto multimedia recording label.
 - Managed all business development issues, taking Callisto to be officially distributed in countries such as Germany, Russia, Japan, USA etc.
 - Managed every stage of the production chain for all its products.
 - Managed budgets and assembled the best possible team for each project (including artists and technicians) while meeting everyone’s expectations and deadlines.
- **Feb 2001 – May 2004: Ph.D. Candidate / Research student** at the University of Genoa, Italy. Ph.D. included 6 months as:
 - **Guest Researcher** at the Royal Institute of Technology in Stockholm, Sweden within the framework of the European Research Project MEGA (IST-1999-20410 Multisensory Expressive Gesture Applications)
- **Oct 1999 – Feb 2001: Analyst / Programmer** at ELSAG in Genoa (Italy). Designed and developed software and web-based components for large scale projects commissioned by “Poste Italiane” (Italian Mails).
- **Mar 1999 – Oct 1999: Multimedia Developer** for Philharmonia srl.

Skills:

- **Project Management:**
 - Knowledge of Agile methodologies such as Scrum
 - Experience with tools like ScrumWorks, Sprintometer, MS Office, OpenOffice etc.
- **Audio / Sound Design:**
 - Experience with tools like Adobe Audition, Sony Sound Forge, Reaper etc. and middleware like FMOD Ex and Wwise.
 - Experience with on location, field and studio recordings as well as technical and artistic direction of recording sessions (both for music and voice over).
 - Experience with editing, mixing, mastering and post-processing of audio and music for commercial projects.
- **Programming and Computer Science:**
 - C/C++, Flash ActionScript 3 and other languages.
 - Artificial Intelligence and statistical models, including: Neural Networks, Finite State Machines, Rule Based Systems, Decision Trees, Hidden Markov Models, Path Finding techniques etc

Memberships and Professional Certificates:

- “Certified Scrum Master” (CSM) by the Scrum Alliance
- Member of the International Game Developers Association (IGDA)

- Included in the 2008 and 2009 editions of Marquis' "Who's Who in the World"

Game Related projects:

Year	Company	Project	Role	Team size	Budget (US\$)	Platform	Description
2008-2009	NYP	Moody Balloons Vocal Edge	Producer Producer	6 5	From M-EDGE	PC	A set of casual games based on the M-EDGE API
2007-2009	NYP	M-EDGE	Producer/ Project Lead	15	\$1,000,000	PC	The "Music-Emotion Driven Game Engine" is a platform for developing a new generation of music games where players interact with the game by means of playing a real musical instrument and by expressing emotions through music.
2006	NTU	Battle of Pasir Panjang	Audio Lead/ Sound Designer	4	<\$10,000	Flash	An historically based game commissioned by the National Archives of Singapore
2005-2006	NTU	Virtual Orchestra	Lead Programmer - Designer	4	<\$100,000	PC	A serious game for introducing children to the basics of orchestral conducting. It was showcased internationally, including reviews on USA Today (31/10/06)
2005	NTU	Bumbleland	Lead Programmer	4	<\$50,000	PC	A game derived from the TRUST project
2005	NTU	TRUST	Audio Lead	12	\$200,000	PC	A collaboration with UK based SMARTLab and BBC to deliver a rehabilitation game for children at KK Hospital in Singapore
2005-present	Personal projects	Freeware Games and Mods	Designer/ Programmer	1-2	-	PC / Flash / Mods	Designed and developed a few freeware games in Flash and C/C++ that got several thousand downloads over the internet

Other Skills / Experiences:

- Admitted to the "Intensive Program in Cognitive Musicology" at the Faculty of Music of the University of Jyväskylä (Finland, 1998) and later attended courses in "Applied Acoustics" (University of Genoa, 1999) and "Acoustics of Musical Instruments" (Royal Institute of Technology, Stockholm, 2001).
- As audio engineer, worked with both affirmed and rising artists such as American flutist Robert Dick, singers Angelo Manzotti and Amanda Pabyan, pianist Andrea Bacchetti, etc.
- Chess Candidate Master in correspondence play (played for the Italian national team in a few friendly postal/email matches) and Genoa Student Chess Champion in 1986. Elo ICCF (2008/1): 2222
- Brown belt in Karate (Shito Ryu style).

Languages:

Italian (mother tongue), very fluent English (both spoken and written), elementary knowledge of Chinese (spoken).

References:

Prof. Riccardo Zoppoli (University of Genoa): zop-dott@dist.unige.it

Prof. Kenji Suzuki (University of Tsukuba): kenji@ieee.org

Prof. Michele Giugliano (University of Antwerpen): michele.giugliano@ua.ac.be