

## Dr. Roberto Dillon – Curriculum Vitae

Born in Genoa (Italy) on 22<sup>nd</sup> March 1973

**Office Address:** DigiPen Institute of Technology  
Pixel Bilding, 10 Central Exchange Green #01-01  
Singapore 138649  
**Singapore ID:** S7368894I  
**Mobile Phone:** +65 94366027  
**Email:** roberto@programandplay.com  
**Personal Website:** [www.ProgramAndPlay.com](http://www.ProgramAndPlay.com)



### Education:

- **2004--Ph.D.** Degree in *Electrical and Computer Engineering* from the University of Genoa, Italy.  
Ph.D. Thesis: **"On the recognition of expressive intentions in music playing: a computational approach with experiments and applications"** focused on the design and development of software modules based on artificial intelligence and statistical methods, such as Hidden Markov Models and Decision Trees, to recognize, track and predict expressivity in actual music playing and their applications within the interactive digital media field.
- **1999--Master** Degree in *Electrical Engineering* from the University of Genoa, Italy.  
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

#### Books:

- **R.Dillon: "The Golden Age of Video Games: the Birth of a Multi-Billion Dollar Industry", AKPeters/CRC Press, 2011 ISBN: 978-1439873236**  
*'The Golden Age of Video Games is an excellent, succinct, and thoroughly accessible history. Highly recommended' - Midwest Book Review*
- **R.Dillon: "On the Way to Fun: an Emotion Based Approach to Successful Game Design", AKPeters, 2010, ISBN: 978-1568815824**  
*"It's a brilliant analysis. Wish I'd thought of it" - Tom Sloper*  
*"'On the Way to Fun' is a choice pick for any would be game designer" - Carl Logan, Midwest Book Review*  
*"Such power is concentrated in this short, concise and ultimately refreshing handbook. Highly recommended" - CHOICE Magazine 11/2010*

#### Journals and refereed conference papers:

- R.Dillon: *"The 6-11 Framework: a new approach to video game analysis and design"*, Proceedings GameOn-Asia, Eurosis, Singapore, 2011
- Yin X., R.Dillon, A.Lam, Ng K.B.: *"Porting and Optimizing Music and Emotion Driven Game Engine from PC Platform to PS 3 Platform"*, Proceedings CGAMES11, Louisville, USA
- 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

#### Invited talks and lectures at international conferences (selection):

- "What can Video Game History Teach us Today?", Korea Games Conference, 2011
- "Analyzing *Fun* in Social Games", Symposium on Social Dynamics in Online Gaming, Singapore, 2011
- "Teaching Game Analysis the Pragmatic Way: the 6-11 Framework", Game Education Summit North America, Redmond, WA, 2011
- "Formal Models for Game Analysis: the MDA and 6-11 Frameworks", Korea Games Conference, 2010
- "Retro Games Exposed: Evergreen Hints and Tips to Design Fun Games", Korea Games Conference, Seoul, 2009
- "Playing Games by playing music: the M-EDGE Project", Korea Games Conference, Seoul, 2008
- "Using Emotions as an input medium for a new generation of Music Games", Game Convention Asia Conference, Singapore 2007
- "A Virtual Orchestra Game for Introducing Children to Music", Serious Games Summit, Washington D.C., 2006

#### Positions held:

- **Jan 2011 - Present: Game Design Consultant:** Collaborating with indie studios like Tokyo based Oyatsukai (for QA and support/brainstorming) and working with Israel/Singapore joint venture **Kentaura Pte. Ltd.** as **Chief Game Designer** on an unannounced social game for PC and mobile platforms.

##### **Duties:**

- Conceptualize game ideas, scope and mechanics.
- Liaising with developers and artists to be sure game design ideas are properly implemented.
- Mentoring and interviewing/recruiting junior developers.

- **Aug 2009 - Present: Department Chair / Assistant Professor** for the Department of Game Software Design and Production, **DigiPen Institute of Technology - Singapore.**

##### **Duties:**

- Teaching different subjects for the B.A. and B.Sc. Degrees in Game Design and for the B.Sc. in Real Time Interactive Simulations. In particular: "Introduction to Computer Environment", "Computer Environment", "Game Project - Introduction", "Game Project I", "Game History", "Game Mechanics I, II and III", "2D Level Design".
- Liaising with the main campus in Redmond, WA for contributing to the latest curriculum development, meeting ACCSC accreditation requirements for the Singapore campus and defining the articulation of DigiPen's courses into the "**Singapore Institute of Technology**" (SIT).
- Managing academic staff and ensure all game design and production courses are effectively being taught according to specification.
- Interviewing both prospective students and lecturers besides mentoring existing freshmen and sophomore students.
- Served as a judge for the CNB sponsored competition "Life does not rewind" targeting at polytechnic and ITE students for developing video games on drug abuse issues.

- **Jan 2007 - Jul 2009: Lecturer** at the School of Interactive and Digital media (SIDM), **Nanyang Polytechnic** (Singapore).

##### **Duties:**

- Module Leader for "Production and Project Management", "Audio Creation" and "Digital Entertainment and Society" besides teaching also different subjects like "C++ Programming", "Digital Entertainment Systems" and "AI for Games".

- **Principal Investigator/Project Lead** for **M-EDGE** (Music-Emotion Driven Game Engine, fully funded with USD1million by the National Research Foundation of Singapore under the grant NRF2007IDM-IDM002-015). Conceptualized and wrote the research proposal, designed the engine architecture, recruited and managed the team from August 2007 to July 2009.
- **Jan 2005 - Dec 2006: Research Fellow** at **Nanyang Technological University – NTU gameLAB** (Singapore).  
**Duties:**
  - Responsible for R&D on Serious games and other projects, including: “**Virtual Orchestra**”, a serious/educational game for introducing children to music which was featured on the international press, including Singapore’s The Straits Times (21<sup>st</sup> February 2006), the May/June 2006 issue of the British music magazine MUSO and ‘USA Today’ (31<sup>st</sup> October 2006).
  - Planned and developed a curriculum for a “**Fundamentals of Game Design and Development**” course on behalf of the **Infocomm Development Authority of Singapore**.
  - Delivered seminars, reports and lectures on specific research topics as required.
- **Jun 2000 - Dec 2005: Co-Founder / Director** : **Callisto Multimedia SNC**.  
**Duties:**
  - Managed all business development issues, taking Callisto’s multimedia CD productions 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 fulfilling everyone’s expectations and meeting the required 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, Department of Speech, Music and Hearing** 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 SpA** in Genoa (Italy).  
**Duties:**
  - Designed and developed software and web-based components, both client and server side, in C++, ASP and DHTML for large scale projects commissioned by “Poste Italiane” (Italian Mails).
- **Mar 1999 - Oct 1999: Multimedia Developer** at **Philarmonia SRL**.  
**Duties:**
  - Designed and developed multimedia applications for interactive CD productions.

## Games and related R&D projects:

Year	Company	Project	Role	Team size	Budget (US\$)	Platform	Description
2011	Kentaura	Unannounced	Chief Game Designer	12	~\$1,000,000	PC/iPhone	An innovative and ambitious social game yet to be announced
2011	Oyatsukai	Fractal Combat	QA	10+	NA	iPhone	A futuristic high speed arcade flight combat game
2010	DigiPen	Orfeo	Designer / Developer	1	-	PC	An experimental game based on my research on emotions and music. Relive Orfeo’s myth by playing his lyre to save Eurydice. <b>Showcased at the “Sense of Wonder Night”, Tokyo Game Show, 2010 and at FILE Games 2011, Rio de Janeiro</b>

2007-2009	NYP	M-EDGE	Principal Investigator (Architect / Lead Designer / Project Manager)	15	\$1,000,000	PC/PS3	The "Music-Emotion Driven Game Engine" is a platform for developing a new generation of music games where players interact by playing a real musical instrument. Different games were developed under my supervision.
2006	NTU	Battle of Pasir Panjang	Audio Lead/ Sound Designer	4	<\$10,000	Flash	A historically based game commissioned by the National Archives of Singapore
2005-2006	NTU	Virtual Orchestra	Principal Investigator (Lead Designer and Programmer)	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

## **Memberships and Professional Certificates:**

- "Certified Scrum Master" (CSM) by the Scrum Alliance (certification obtained in 2008)
- Member of the International Game Developers Association (IGDA) since 2006
- Included in the 2008 and 2009 editions of Marquis' "Who's Who in the World"

## **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, Amanda Pabyan and Ingela Bohlin, pianist Andrea Bacchetti, violinists Huang Bin, Giulio Plotino and Tanja Becker-Bender, conductors Tito Ceccherini and Michele Trenti 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 (2009/2): 2207
- Brown belt in Karate (Shito Ryu style).

## **Languages:**

Italian (mother tongue), excellent command of English (both spoken and written), elementary knowledge of German and Chinese (spoken).

## **References:**

**Prof. Kenji Suzuki (University of Tsukuba):** [kenji@ieee.org](mailto:kenji@ieee.org)

**Prof. Edmond Prakash (University of Bedfordshire):** [Edmond.Prakash@beds.ac.uk](mailto:Edmond.Prakash@beds.ac.uk)

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

**Dr. Zhi Zeng (Microsoft):** [zhizheng@microsoft.com](mailto:zhizheng@microsoft.com)