

Garcia Maxime

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Research interests

Currently in post-doctorate at Inria Grenoble (since January 2020), my research is focused on computer graphics and more specifically on non photorealistic rendering and character animation.

Education

- 2016-2019 **PhD Thesis**, *Performance Transfer: Animating Characters by Playing and Acting*. Development of methods for creating expressive animation sequences from recorded physical props (like figurines) trajectories, Supervised by Rémi Ronfard, Inria/Université Grenoble Alpes.
<https://tel.archives-ouvertes.fr/tel-02934748>
- 2013-2016 **Engineering school ENSIMAG**, Master 2: *Master Of Science and Informatics of Grenoble, Graphics, Virtual Reality and Robotics* section, Master 1: *Mathematical Modeling, Image processing and Simulation* section, Grenoble.

Research and Publications

My research work is centered around two axes: intuitive character animation sequences creation and non-photorealistic rendering. The first, focuses on the creation of expressive animation sequences from real life performances played with instrumented and rigid figurines while the second focuses on giving a 2D painted aspects to 3D scenes using mark-based approaches at the post-processing stage.

- 2021 **Coherent Mark-based Stylization of 3D Scenes at the Compositing Stage**, *Computer Graphics Forum, Wiley, In press, Eurographics 2021,40,(2)*, <https://hal.inria.fr/hal-03143244>, Maxime Garcia, Romain Vergne, Mohamed-Amine Farhat, Pierre Bénard, Camille Noûs, Joëlle Thollot.
- 2020 **Recognition of Laban Effort Qualities from Hand Motion**, *MOCO'20 - 7th International Conference on Movement and Computing, Jul 2020, Jersey City/ Virtual, United States*, <https://hal.inria.fr/hal-02899999>, Maxime Garcia, Rémi Ronfard.
- 2019 **Spatial Motion Doodles: Sketching Animation in VR Using Hand Gestures and Laban Motion Analysis**, *MIG 2019 - ACM SIGGRAPH Conference on Motion, Interaction and Games, Oct 2019, Newcastle upon Tyne, United Kingdom*, <https://hal.archives-ouvertes.fr/hal-02303803/>, Maxime Garcia, Rémi Ronfard, Marie-Paule Cani.
- 2018 **Automatic Generation of Geological Stories from a Single Sketch**, *Maxime Garcia, Marie-Paule Cani, Rémi Ronfard, Claude Gout, Christian Perrenoud*, Expressive 2018, Aug 2018, Victoria, Canada, <https://hal.inria.fr/hal-01817923v1>.

- 2017 **Figurines, a multimodal framework for tangible storytelling**, *Maxime Portaz, Maxime Garcia, Adela Barbulescu, Antoine Begault, Laurence Boissieux, Marie-Paule Cani, Rémi Ronfard, Dominique Vaufreydaz*, WOCCE 2017 - 6th Workshop on Child Computer Interaction at ICMI 2017 - 19th ACM International Conference on Multi-modal Interaction, Nov 2017, Glasgow, United Kingdom. pp.52-57.
- 2017 **Making Movies from Make-Believe Games**, *Adela Barbulescu, Antoine Begault, Laurence Boissieux, Marie-Paule Cani, Maxime Garcia, Maxime Portaz, Alexis Viand, Pierre Heinisch, Romain Dulery, Rémi Ronfard, Dominique Vaufreydaz*, 6th Workshop on Intelligent Cinematography and Editing (WICED 2017), Apr 2017, Lyon, France, <https://hal.inria.fr/hal-01518981v2>.

Teaching Experience (216 hours)

- 2017-2021 **Computer Graphics**, *Teacher assistant. Introduction to OpenGL 3.3, rasterization rendering pipeline, texturing, local illumination and keyframe animation to Master 1 students during practicals*, Grenoble INP - MOSIG Master, 54 hours.
- 2016-2021 **Computer Graphics Complementary**, *Teaching Ray tracing and Ray marching methods to Master 1 students through lectures and practicals. Conception of practicals and tutorials for this course*, Grenoble INP - MSIAM Master, 72 hours.
- 2016-2018 **Functional Programming**, *Teacher assistant. Supervising practicals and tutorials in OCaml for License 1 students. Wrote evaluation tests and additional practicals*, Université Grenoble Alpes, 90 hours.

Administrative Experience

- February 2021 - July 2021 **M2 internship supervision**, *Co-supervising the internship of Mohamed-Amine Farhat, Master 2 MOSIG, with Romain Vergne and Joëlle Thollot, on motion depiction using a mark-based stylization approach. Co-supervising the internship of Yidi Zhu, Master 2 MOSIG, with Rémi Ronfard, untitled "Directing virtual stage performances using voice and gesture"*, 6 months.
- Spring 2018 **M2 thesis supervision**, *Co-supervising the internship of Remi Colin de Verdier, an Imagina Master 2 student, with Remi Ronfard, untitled "Development of a real-time and multi-target inverse kinematic framework". Integration of FABRIK, a state-of-the-art inverse kinematic algorithm into an internal game engine and expending it*, 6 months.
- 2017-2018 **Reading group organization**, *Managing a reading group oriented towards deep learning and its applications in computer graphics. Presenting research papers, establishing list of potential interesting papers and making presentation plannings*.
- 2016-2018 **Seminars organization**, *In charge of organizing internal and external seminars of the Imagine Team, Planning presentations, in charge of communication especially when inviting external researchers*.
- 2017-2018 & 2020 **Organization of doctoral meetings**, *Managing meetings gathering PhD and internship students. Presenting current research results, discussing them, propose ideas and made tutorials for useful tools in graphics (Blender, Mixamo, Sketchfab,...)*.

Other Experiences

- 2016-Now **Game Engine development**, *development of a C++17 game engine, integrating recent research work. Features character animation system, flexible rendering pipeline, node based scene representation, mesh topological operations and physics..*
- Summer 2015 **Engineer Assistant**, *Information extracting and referencing application conception using SQL Server and C#. Filtering special format files and displaying it for developer manipulation, Index-Education Marseille, 9 weeks.*
- 2015 June **Contribution to the Grenoble Inria project: FIGURINES**, *Collaboration with researchers Antoine Begault and Marie-Paule Cani for characterizing characters' animation with emotions , 1 month.*

IT Skills

- OS GNU/Linux, Windows
- Languages C/C++/C#, Python, Latex, Ada, Java, R, Scilab languages, SQL Server
- Graphics OpenGL 4, GLSL, Blender, Substance Painter, Unity 3D, Clip Studio Paint, Adobe Photoshop (CS5)
- Tools GCC, GDB, Valgrind, Git, Mercurial

Languages

- French **Native speaker.**
- English **Proficient**, *last TOEIC on 11/12/2014, score : 930/990.*
- Japanese **Basic.**

Activities

- Music **Piano for 15 years including 2 years at Conservatory of Marseille and currently at Conservatory of Grenoble**, *Musical Study Certificate (CEM) piano section obtained in 2020.*
- ANI Grenoble association **Président. Cultural events organization. Developing game software in C# and Java for entertainment (eg: blind test).**
- 3D modeling and drawing **3D models available at <https://typhomnt.artstation.com/>.**
- Running and Biking **On a daily basis and sometime participating at races.**