

Damien Rohmer

CV

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Current status

Status **Professeur**, *École polytechnique, Institut Polytechnique de Paris.*
Department of Informatics (DIX)

Research **Computer Graphics.**

3D Modeling, Real-time Animation & Simulation, User Interaction.

Lab **LIX**, *Laboratoire d'Informatique de l'École polytechnique, UMR 7161, CNRS.*

Team **VISTA**, *Visual Worlds: Temporal Analysis, Animation & Authoring.*

Main ongoing responsibilities

2023 - **Vice President DIX.**

In charge of the teaching for the Department of Informatics of École polytechnique

2019 - **Head of the VISTA research team at LIX.**

Computer Graphics and Vision team, 3 permanents and about 25 people.

2018 - **Coordinator of the Image, Vision & Machine Learning program.**

3rd year (master level) specialization at École Polytechnique (IVA).

Education and Diplomas

2017 **HdR**, *Grenoble University.*

Habilitation à Diriger des Recherches

Interactive High-Level models for 3D Virtual Shape Creation & Animation

Developed within the LJK/Inria Grenoble lab, team IMAGINE.

Spécialité Informatique et Mathématique Appliquées

2007–2011 **PhD**, *Grenoble University.*

Active Geometry for Animation and Modeling

Developed within the LJK/Inria Grenoble lab, team EVASION.

Spécialité Mathématiques et Informatique

2006-2007 **Master**, *Université de Saint-Etienne.*

Optics, Image and Vision

2003-2007 **Engineer**, *CPE Lyon.*

Engineering degree in Electronics, Telecommunication & Informatics.

Specialization in Image and Algorithmics.

Employment

- 2017 - **Professeur**, *École polytechnique*.
Département d'Informatique (DIX)
Researcher at the Laboratoire d'Informatique de l'École Polytechnique (LIX)
Equivalent tenured Associate Professor/Full Professor.
- 2010-2017 **Enseignant Chercheur**, *CPE Lyon*, eq. Maitre de Conférence.
Département Electronique, Telecom, Informatique (ETI)
Equivalent tenured Assistant Professor.
Research associated to Inria Rhone-Alpes (Imagine team)
2016-2017: Full time Invited Researcher at Inria Rhone-Alpes (délégation)
- 2007-2010 **Moniteur**, *Polytech Grenoble*.
Part-time Teaching Assistant. Involved in class at Polytech Grenoble, ENSIMAG, UFR-IMAG.
- 2005-2006 **Research Assistant**, *LBNL*, Berkeley.
Gap year as Research Assistant at the Lawrence Berkeley National Laboratory. Part of the Medical Imaging Group.

Paper Awards

- 2023 **AFIG/EGFR**, *2nd Best Paper Award*, Théo Cheynel.
Sparse Motion Semantics for Contact Aware Retargeting
- 2023 **ICCV - CVAAD**, *Best Poster Award*, Arnaud Gueze.
Floor Plan Reconstruction from Sparse Views: Combining Graph Neural Network with Constrained Diffusion
- 2022 **AFIG/EGFR**, *Best Paper Award*, Jiayi Wei.
Robust-statistics Based Approach for Pointset Denoising
- 2022 **SCA**, *Best Paper Honorable Mention Award*, Eduardo Alvarado.
Generate Real-Time Characters Making their way through Dynamic Environments
- 2022 **GI**, *Best Paper, Michael Sweeney Award*, Niranjana Kalyanasundaram.
Acceleration Skinning: Kinematics-Driven Cartoon Effects for Articulated Characters
- 2021 **AFIG/EGFR**, *Best Paper Award*, David-Henri Garnier.
Growing Optimized Anisotropic Microstructure with Reaction/Diffusion
- 2021 **EUROGRAPHICS**, *Best Paper Honorable Mention Award*, Damien Rohmer.
Velocity Skinning for Real-time Stylized Skeletal Animation
- 2019 **MIG**, *Best Presentation Award*, Adrien Nivaggioli.
Animation Synthesis Triggered by Vocal Mimics
- 2016 **AFIG/EGFR**, *3rd Best Paper Award*, Amélie Fondevilla.
Modeling Symmetric Developable Surfaces from a Single Photo
- 2012 **AFIG/EGFR**, *Best Paper Award*, Rodolphe Vaillant.
Déformation de la peau d'un personnage avec prise en compte des contacts
- 2007 **Univ. Lyon**, *Master Thesis Award*, Damien Rohmer.
Animation de personnages par skinning à volume constant

PhD Student supervision

Current PhD Student

- 2024 - **Xianjin Gong**, *Editing 3D Keyframed Animation via Gesture & Vocal Inputs*.
- 2024 - **Amandine Legrand**, *Multi-resolution Sketch-Based Animation*.
Co-supervision with Amal Dev-Parrakat.
- 2023 - **Rodrigo Stevenson**, *Deforming and Animating Multi-Material Objects Using Multi-Valued Field Functions*.
Co-supervision with Marie-Paule Cani.
- 2023 - **Arnaud Gueze**, *Complex interior scene reconstruction from sparse multimodal data*.
CIFRE Homiwoo. Co-supervision with Marie-Paule Cani and Matthieu Ospici.
- 2022 - **Théo Cheynel**, *Video-Based Synthesis and Editing of 3D Animated Humanoid Characters*.
CIFRE Kinetix. Co-supervision with Marie-Paule Cani.

Former PhD Student

- 2020-2024 **David-Henri Garnier**, *Interactive 3D Modeling of Evolutionary and Emergent Bio-Inspired Shapes*.
CIFRE Dassault Systèmes.
Currently: Research engineer at Dassault Systèmes.
- 2020-2023 **Eduardo Alvarado**, *Groups of humans and animals in natural environments: a multi-scale approach*.
Co-supervised with Marie-Paule Cani
Currently: PostDoc at MPI
- 2020-2023 **Jiayi Wei**, *Novel representations for surface Modeling and Analysis*.
Co-supervised with Pooran Memari
Currently: Engineer at Sophia Antipolis
- 2019-2023 **Maud Lastic**, *Simulation and Authoring of Consistent Volcanic Phenomena*.
Co-supervised with Marie-Paule Cani
Currently: Engineer at Dassault Systèmes
- 2017-2021 **Thomas Buffet**, *Field-Based approaches for the collision-free animation of layered and dynamic clothing*.
Co-supervised with Marie-Paule Cani
Currently: Engineer at 2K, Video Games, California.
- 2017-2020 **Corentin Mercier**, *Geometric Modeling, Simplification, and Visualization of Brain White Matter Tractograms*.
Co-advised with Isabelle Bloch, Pietro Gori, Jean-Marc Thiery
Currently: Engineer at Unity, Game Engine, Paris.
- 2016-2019 **Amélie Fondévilla**, *Reverse-Engineering Fashion Products : From a single-view Sketch to a 3D Model*.
Co-advised with Stefanie Hahmann
Currently: Engineer at Les fées Spéciales, Animation Studio, Montpellier
- 2013-2016 **Camille Schreck**, *Interactive Deformation of Virtual Paper*.
Co-advised with Stefanie Hahmann
Currently: Inria Researcher (ISFP), MFX team, Nancy

- 2013-2016 **Ulysse Vimont**, *Novel methods for the interactive design of complex objects and animations.*
Co-advised with Marie-Paule Cani
Currently: Engineer at Anatoscope, Digital Anatomy, Grenoble.

Grants and industrial contracts

Public Grants

- 2023-2027 **ANR AnimationConductor**, *Project Member, Local PI, 174k€.*
Conducting animations using voice and gestures
- 2023-2027 **ANR MultiForm**, *Project Member, Local PI, 165k€.*
MultiVariate Implicit Function deformation
- 2020-2023 **H2020 ITN CLIPE**, *Project Member, 550k€.*
Creating Lively Interactive Populated Environments
- 2017-2019 **Paris-Saclay DIGICOSME MetaTracts**, *Project Member, Local PI, 73k€.*
Multi-Resolution representation of brain tractograms
- 2016-2021 **ANR Fold-Dyn**, *Project Member, Local PI, 160k€.*
Field-Oriented Layered Dynamics animating 3D characters
- 2016-2020 **ANR eRoma**, *Project Member, 160k€.*
Expressive restoration of Gallo-Romanian statues by virtual sculpture and animation
- 2015-2018 **ARC6 POTASSE**, *Project Member.*
From acquisition of digital assembly to CAD models.

Industrial Collaboration

- 2024 **Animaj**, *PI, <10k€.*
Auto-encoder for animated character (Internship supervision).
- 2023-2026 **CIFRE Homiwoo**, *PI, 45k€.*
Reconstructing of complex interior scenes from sparse multimodal data.
- 2022-2025 **CIFRE Kinetix**, *PI, 45k€.*
Improving arbitrary human motion reconstruction from monocular acquisition.
- 2022 **ModaLive**, *PI, <10k€.*
3D Garment completion (Internship supervision).
- 2020-2023 **CIFRE Dassault Systèmes**, *PI, 80k€.*
Generation and Modeling of 3D Bio-Inspired Structures.
- 2020-2023 **FUI Collodi 2**, *Member.*
Collaboration with TeamTo and Mercenaries Engineering

Steering committee of Chairs

- 2018 - 2022 **Chair ScienceXGames with Ubisoft**, *CoPil Member.*
Involvement in the creation of new courses, projects, and workshop organization.

Teaching

I have always been highly involved in teaching, spending time to develop and improve classes, as well as proposing tools related to teaching. In general, I have been teaching about 200 hours of class per year since 2010. In the vast majority of the cases, I am the main responsible and I create from scratch all the lectures and technical labs. This allows me to propose lectures that can be tightly connected to the practical labs.

Administration of teaching

- 2020-present **IGD Master Steering committee member**, IP Paris.
IGD: Master program in "Interaction, Graphics & Design" at IP Paris. Part of the program evolution, and selection committee.
- 2018-present **Coordinator Image, Vision & Machine Learning (IVA) program**, *École polytechnique*.
In charge of the 3rd year (master level) IVA filière/specialization at École Polytechnique.
- 2014-2017 **Coordinator of the Math, Image and Signal domain**, *CPE Lyon*.

Ongoing classes (2023/2024)

- 2018-2024 **INF585 Computer Animation**, X3A, Lecture & Labs, Open-Source Course, 36h, 50 Students.
Include students from X3A, M1 & M2 IGD IP Paris, M1 MSc&T AI-ViC, EuroTeQ.
- 2018-2024 **INF443 Graphique 3D**, X2A, Labs, 40h, 110 students.
- 2017-2024 **CSE104 Web Programming**, BX1, Lecture & Labs, 24h, 50 students.
- 2019-2024 **ANI3D Animation 3D**, EPITA, Lecture & Labs, 16h, 50 students.

Detail of the classes

Legend:

- **Level:** Level of students
 - Master 2 level: M2, 5ETI
 - Master 1 level: X3A, 4ETI
 - Bachelor(/Licence) level: BX1/2/3, X2A, 3ETI
- **#:** Number of students in the class
- **Lang.:** Language used for the labs.
- **R:** Responsible of the course: Fully prepare the class and practice, Find lab assistants, Handle exam and grading.
- **L:** Lecture hours.
- **P:** Practice labs hours (TD/TP).
- **Total:** Total hours counted in *equivalent TD* - Detailed computation may vary depending on the institute.

2023/2024 (École Polytechnique)

	Title	Level	#	Lang.	R	L	P	Total
INF585	Computer Animation	X3A*	47	C++	x	18h	18h	45h
CSE104	Web Programming	BX1	41	JS	x	6h	22h	31h
INF443	Graphique 3D	X2A	111	C++		0h	40h	40h
Other duties (Include Vice-presidence, track coordination, juries, office hours, etc.)								112h
								Total eq.TD 228h

X3A*: 3rd year polytechnicien + M1 & M2 students from IGD master at IP Paris (and DataAI), + M1 students from MSc&T AI-ViC + EuroteQ (remote).

Main responsibility

- Vice-president Departement of Informatics (DIX).
- Coordinator of the filière *Image, Vision and Machine Learning (IVA)*.

Extra classes

- Create a **Research School in Animation for Graphics** taking place in April 2024. Organize three days of lecture and labs offered at the national level in collaboration with the GRD IG-RV.
- ANI3D: Animation 3D, EPITA 3A Image, 18h (6h lecture, 12h labs).

2022/2023 (École Polytechnique)

	Title	Level	#	Lang.	R	L	P	Total
INF585	Computer Animation	X3A*	50	C++	x	18h	18h	45h
CSE104	Web Programming	BX1	53	JS	x	6h	22h	31h
INF443	Graphique 3D	X2A	102	C++		0h	40h	40h
MPRI-2.39	CG and Scientific Visualization	M2 MPRI	10	C++		9h	6h	19h
Other duties (Include Vice-presidence, track coordination, juries, office hours, etc.)								102h
								Total eq.TD 237h

Main responsibility

- Vice-president Departement of Informatics (DIX).
- Coordinator of the filière *Image, Vision and Machine Learning (IVA)*.

Extra classes

- ANI3D: Animation 3D, EPITA 3A Image, 18h (6h lecture, 12h labs).

2021/2022 (École Polytechnique)

	Title	Level	#	Lang.	R	L	P	Total
INF585	Computer Animation	X3A*	48	C++	x	18h	18h	45h
CSE104	Web Programming	BX1	49	JS	x	6h	22h	31h
INF443	Graphique 3D	X2A	109	C++		0h	36h	36h
INF630	Refresher in CG	M2 AI-ViC	5	C++		3h	12h	16h
MPRI-2.39	CG and Scientific Visualization	M2 MPRI	10	C++		9h	6h	19h
Other duties (Track coordination, juries, office hours, etc.)								120h
								Total eq.TD 267h

Main responsibility

- Coordinator of the filière *Image, Vision and Machine Learning (IVA)*.
- Member DIX committee (student relation).

Extra classes

- ANI3D: Animation 3D, EPITA 3A Image, 18h (6h lecture, 12h labs).

2020/2021 (École Polytechnique)

	Title	Level	#	Lang.	R	L	P	Total
INF585	Computer Animation	X3A*	37	C++	x	18h	18h	45h
CSE104	Web Programming	BX1	53	JS	x	6h	22h	31h
INF443	Graphique 3D	X2A	114	C++		0h	40h	36h
INF630	Refresher in CG	M2 AI-ViC	5	C++		3h	12h	16h
MPRI-2.39	CG and Scientific Visualization	M2 MPRI	10	C++		9h	6h	19h
Other duties (Track coordination, juries, office hours, etc.)								115h
								Total eq.TD 262h

Main responsibility

- Coordinator of the filière *Image, Vision and Machine Learning (IVA)*.
- Member DIX committee (student relation).

Extra classes

- ANI3D: Animation 3D, EPITA 3A Image, 18h (6h lecture, 12h labs).

Special case

- Create online class for Computer Animation and Web Programming during covid period.

2019/2020 (École Polytechnique)

	Title	Level	#	Lang.	R	L	P	Total
INF585	Computer Animation	X3A*	28	C++	x	18h	18h	45h
CSE104	Web Programming	BX1	39	JS	x	6h	22h	31h
INF443	Graphique 3D	X2A	98	C++		0h	40h	36h
INF630	Refresher in CG	M2 AI-ViC	5	C++		3h	12h	16h
MPRI-2.39	CG and Scientific Visualization	M2 MPRI	10	C++		9h	6h	19h
Other duties (Track coordination, juries, office hours, etc.)								106h
								Total eq.TD 253h

Main responsibility

- Coordinator of the filière *Image, Vision and Machine Learning (IVA)*.
- Member DIX committee (student relation).

Extra classes

- ANI3D: Animation 3D, EPITA 3A Image, 18h (6h lecture, 12h labs).

2018/2019 (École Polytechnique)

	Title	Level	#	Lang.	R	L	P	Total
INF585	Computer Animation	X3A*	33	C++	x	18h	18h	45h
CSE104	Web Programming	BX1	40	JS	x	6h	22h	31h
INF443	Graphique 3D	X2A	122	C++		0h	40h	36h
INF630	Refresher in CG	M2 AI-ViC	5	C++		3h	12h	16h
MPRI-2.39	CG and Scientific Visualization	M2 MPRI	10	C++		9h	6h	19h
Other duties (Track coordination, juries, office hours, etc.)								117h
								Total eq.TD 264h

Main responsibility

- Coordinator of the filière *Image, Vision and Machine Learning (IVA)*.

Special case

- Creation of the labs for the class Graphique 3D with a large number of student. Start of the library "VCL" that will become "CGP" later.
- Creation of the lecture and labs for the Computer Animation class.

2017/2018 (École Polytechnique)

	Title	Level	#	Lang.	R	L	P	Total
CSE104	Web Programming	BX1	45	JS	x	6h	22h	31h
INF473F	Modélisation pour la Fabrication 3D	X2A	12	JS Three.js		0h	32h	32h
MPRI-2.39	CG and Scientific Visualization	M2 MPRI	10	C++		6h	3h	12h
Other duties (New classes, Track coordination, Office hours, etc.)								87h
								Total eq.TD 162h

Main responsibility

- Coordinator of the filière *Image, Vision and Machine Learning (IVA)*.

Special case

- Creation of the new class on Web Programming. Lecture & Labs (HTML, CSS, JavaScript, PHP).
- Creation of the labs for the class Modélisation pour la Fabrication 3D in JavaScript with Three.js.
- Creation of few classes and introduction to Graphics Programming labs for the MPRI course on CG and Scientific Visualization.

2016/2017 (Délégation chez Inria)

Title	Level	#	Lang.	R	L	P	Total
Rendu graphique	5ETI IMI	120	C++	x	6h	18h	24h
Animation et Simulation	5ETI IMI	120	C++	x	8h	16h	24h
Total							48h

Main responsibility

- Coordinator of the domain *Math, Image, Signal*.

2015/2016 (CPE Lyon)

Title	Level	#	Lang.	R	L	P	Total
Développement Logiciel en C	3ETI	120	C	x	12h	24h	36h
Traitement et Synthèse d'Images	4ETI	120	C++		4h	16h	20h
Rendu graphique	5ETI IMI	30	C++	x	6h	18h	24h
Animation et Simulation	5ETI IMI	30	C++	x	8h	16h	24h
Programmation générique en C++	4ETI IMI	30	C++	x	8h	16h	24h
Introduction à l'infographie	4ETI IMI	45	Blender	x	8h	16h	24h
Modélisation et géométrie	4ETI IMI	30	C++	x	6h	10h	16h
Analyse numérique	4ETI IMI	30	C++		3h	4h	7h
Projet Image/OpenCV	4ETI IMI	30	C++			16h	16h
Projet IMI	5ETI IMI	30					40h
Total							231h

Main responsibility

- Coordinator of the domain *Math, Image, Signal*.

2014/2015 (CPE Lyon)

Title	Level	#	Lang.	R	L	P	Total
Développement Logiciel en C	3ETI	120	C	x	12h	32h	44h
Traitement et Synthèse d'Images	4ETI	120	C		4h	32h	36h
Synthèse d'images	5ETI IMA	15	C++	x	10h	10h	20h
Programmation générique en C++	4ETI IMI	30	C++	x	8h	16h	24h
Introduction à l'infographie	4ETI IMI	45	Blender	x	8h	16h	24h
Modélisation et géométrie	4ETI IMI	30	C++	x	6h	12h	18h
Analyse numérique	4ETI IMI	30	Python		3h	4h	7h
Introduction à Linux	3ETI	15	Bash			8h	8h
Projet Image/OpenCV	4ETI IMI	30	C++			16h	16h
Projet init. recherche	5ETI IMA	15					20h
Total							241h

Main responsibility

- Coordinator of the domain *Math, Image, Signal*.

Extra classes

- Programmation en Python (ISN), CEPEC (Formation for high school professor), 18h.
- Computer Graphics, Collegium Da Vinci, Poznan University, 15h.

2013/2014 (CPE Lyon)

Title	Level	#	Lang.	R	L	P	Total
Développement Logiciel en C	3ETI	120	C	x	12h	32h	44h
Traitement et Synthèse d'Images	4ETI	120	C		4h	36h	40h
Synthèse d'images	5ETI IMA	15	C++	x	10h	30h	40h
Programmation générique en C++	4ETI IMI	40	C++	x	8h	16h	24h
Introduction à l'infographie	4ETI IMI	45	Blender	x	8h	16h	24h
Modélisation et géométrie	4ETI IMI	40	C++	x	6h	10h	16h
Analyse numérique	4ETI IMI	40	Python		3h	4h	7h
Analyse d'images	4ETI IMI	40	Matlab	x	3h	4h	7h
Total							202h

Main responsibility

- Coordinator of the domain *Math, Image, Signal*.

Special case

- Creation of the new speciality IMI (Image, Modélisation et Informatique / Image, Modeling & Computing)
- Creation of the Lecture and Labs for the new classes in CG and C++.

Extra classes

- Programmation en Python (ISN), CEPEC (Formation for high school professor), 18h.
- Programmation en Python, Journée prof de prépa, 15h.
- Programmation en Python, Enseignant prépa Saint-Just, 12h.

2012/2013 (CPE Lyon)

Title	Level	#	Lang.	R	L	P	Total
Développement Logiciel en C	3ETI	120	C	x	12h	24h	36h
Synthèse d'images	5ETI IMA	15	C++	x	10h	30h	40h
Programmation concurrente	3ETI	30	C		0h	24h	24h
Système d'exploitations	4ETI	30	C		0h	40h	40h
Traitement du signal	3ETI	30	Matlab		0h	16h	16h
Encodage d'image et videos	5IRC	10	C++		6h	14h	20h
Analyse d'images	4ETI	20	Matlab		4h	4h	8h
Projet init. recherche	5ETI IMA	15					10h
Total							194h

Extra classes

- Numerical methods (en), M2 IMESI, 10h.
- Programmation en Python, Journée prof de prépa, 12h.

Special case

- Create a new class on "Développement Logiciel en C" for a large number of students. Create an automatic grading system running individually for each student.

2011/2012 (CPE Lyon)

Title	Level	#	Lang.	R	L	P	Total
Synthèse d'images	5ETI IMA	15	C++	x	10h	20h	30h
Synthèse d'images	4ETI	20	C++	x	12h	16h	28h
Programmation objet en C++	3ETI	30	C++		0h	18h	18h
Signaux et systèmes linéaires	3ETI	30	Matlab		0h	20h	20h
Signaux aléatoires	4ETI	30	Matlab		0h	8h	8h
Système d'exploitations	4ETI	30	C		0h	40h	40h
Analyse d'images	4ETI	20	Matlab		4h	4h	8h
Introduction à la synthèse d'images	3ETI	120			2h	0h	2h
Projet init. recherche	5ETI IMA	15					10h
Total							164h

Special case

- Create an automatic quiz generator for the class "Système d'exploitations".

2010/2011 (CPE Lyon)

Title	Level	#	Lang.	R	L	P	Total
Synthèse d'images	5ETI IMA	15	C++	x	8h	18h	26h
Synthèse d'images	4ETI	20	C++	x	12h	16h	28h
Signaux et systèmes linéaires	3ETI	30	Matlab		0h	24h	24h
Signaux aléatoires	4ETI	30	Matlab		0h	8h	8h
Système d'exploitations	4ETI	30	C		0h	40h	40h
Analyse d'images	4ETI	20	Matlab		4h	4h	8h
Introduction à la synthèse d'images	3ETI	120			2h	0h	2h
Projet init. recherche	5ETI IMA	15					10h

Total **146h**

Special case

- Create new lecture and labs for the classes: Synthèse d'images.

2009/2010 (Moniteur Polytech Grenoble)

Univ.	Title	Level	#	Lang.	R	L	P	Total
UFR-IMAG	Visualisation, marching cube	M1-Info	15	C++		2h	4h	6h
UFR-IMAG	Visualisation volumique	M2-Pro CAO	10	C++		1.5h	3h	4.5h
ENSIMAG	Algorithmique et structures de données	1A	30	Ada		0h	27h	27h

Total **37.5h**

Extra classes

- Déformation de maillages, CPE Lyon, 5ETI, 8h.

2008/2009 (Moniteur Polytech Grenoble)

Univ.	Title	Level	#	Lang.	R	L	P	Total
Polytech	Visualisation Multirésolution	RICM3	19	C++	x	18h	18h	45h
ENSIMAG	Algorithmique et structures de données	1A	30	Ada		0h	27h	27h
Polytech	Etudes d'approfondissements	RICM3	19	C++	x		8h	8h
Polytech	Tutorat PFE	RICM3	19					10h

Total **82h**

Special case

- Take the responsibility to create lecture and labs for the class Visualisation Multirésolution to replace the regular professor in sabbatical.

Extra classes

- Déformation de maillages, CPE Lyon, 5ETI, 2h.

2007/2008 (Moniteur Polytech Grenoble)

Univ.	Title	Level	#	Lang.	R	L	P	Total
Polytech	Interface Homme Machine	RICM2	42	Java		0h	24h	24h
UFR-IMAG	Traitement d'images	M1 Info	30	Matlab		0h	15h	15h
UFR-IMAG	Réseaux	M1 MIAGES	30	C		0h	12h	12h
Polytech	Tutorat PFE	RICM3	19					10h
UFR-IMAG	Animation et Visualization	M1 Info	10	C++				15h
Total								76h

Main personal contributions

2022 **Open-Source course in 3D Animation & Simulation.**

I have developed a fully open-source course linked to the "INF585 - Computer Animation" course that I created and handled for the X3A students at École Polytechnique from 2018 to 2024. The class is fully available online, and I provide the source material for the online slide content, labs structure, and associated code frameworks. Lab lectures are also available as pre-recorded videos and available on YouTube. The pre-recorded videos were started during covid period, the lab codes rely on the CGP framework, and the slides and lab descriptions are made using the Static Website generator with LHTML language. The class could be followed by onsite students from various level (X3A, IGD M1, IGD M2, AI-ViC M1), as well as offsite students from the EuroTeQ consortium that have been attending it asynchronously.

- Course Webpage: https://damienrohmer.com/data/teaching/2022_2023/x-inf585/
- Slides source material: https://github.com/drohmer/inf585_lecture_slides
- Lab exercise source: https://github.com/drohmer/inf585_lab_class
- Lab code source: https://github.com/drohmer/inf585_lab_code

2013 **Creation of the specialty Image, Modeling and Computing at CPE Lyon.**

I've been particularly involved in the development of a new specialization at CPE Lyon (equivalent Master 1 and Master 2 level). This Image, Modeling & Computing (IMI) program replaced the previous specialization in "Image & Algorithm". It gave a greater emphasis to computer science and software development, digital analysis and computer graphics (image synthesis). My role has been to propose and describe the program contents, find the teacher of the classes, manage the class for which I am responsible, and handle the presentation of the program to the students. The number of students choosing the IMI specialization has risen from around ten a year to over 30. The IMI is still in place at CPE Lyon today.

2013 **Automatized correction and feedback tool for large CS class.**

Along with the creation of a new class dedicated to "Software Development in C" at CPE Lyon that I handled between 2013 and 2015, I have been developing and setting up a series of Python and Bash scripts to automatize the tasks to check and grade student code. Each student was able to receive a personalized feedback email describing the success and failure of his code. This allowed fast, regular feedback, plagiarism detection, and precise grading for 130 students every week.

Software

Main developer for general tools

I am regularly invested in the development of various tools to automatize tasks. In some cases, I try to provide a clean open-source solution that can be beneficial to the general community.

2019 - **CGP - Computer Graphics Programming Library.**

I develop since 2019 the CGP (Computer Graphics Programming) library as an open-source code framework to help teaching and research in Graphics. CGP provides an "as simple as possible" low level multi-platform, set of functions and classes in C++ to generate 3D scene using OpenGL while remaining easy to use, read, and debug.

- Link: <https://imagecomputing.net/cgp/>
- Github repository: <https://github.com/drohmer/cgp>

2021 - **LHTML - Lightweight HTML.**

I develop a parser for a custom description language called "lightweight HTML" that I use to quickly describe webpage for both slides and website. LHTML is inspired from markdown, but provides additional functionalities to integrate full and quick CSS control.

- Github repository: <https://github.com/drohmer/lhtml>

2021 - **Static Website LHTML Generator.**

I propose a static website generator tool written in Python and relying upon the Jinja template language and compatible with the LHTML description language. The static website generator adds functionality to generate slides and webpage with automatic menus and navigation tools.

- Github repository: https://github.com/drohmer/static_website_lhtml

2023 - **HAL webpage generator.**

I propose a tool extracting and formatting HAL data on publication. Compared to the default tool provided by HAL, I added specific functionalities useful in Graphics with: Video thumbnails, awards, Coupled conference and journal publication, code link, video/presentation/project page links. The tool can work as a single Javascript script, and can be linked to additional local modifier described in YAML.

- Github repository: https://github.com/drohmer/publication_listing_hal
- Example of result: <https://www.lix.polytechnique.fr/vista/publications/index.html>

2015 - **AFIG - Job listing.**

I developed an online PHP tool allowing the community to post and see job openings. It is currently used within the AFIG community, and helpful for students looking for internship, PhD, or engineering positions.

- Job Listing: <https://www.asso-afig.fr/site/offres/>

2015 - **AFIG - Company listing.**

I developed a online tool relying on YAML and github task automatization to allow easy listing for CG companies (as well as master and online courses).

- Company listing: <https://www.asso-afig.fr/site/entreprises/>
- Github: <https://github.com/Afig-Asso/entreprises>
- Master listing: <https://github.com/Afig-Asso/formations-graphique>
- Online CG courses listing: <https://github.com/Afig-Asso/cours-online>

Open-source research codes

When possible, I try to provide and encourage my student to provide their research code as open-source. The following listing gives some code related to the projects I have been supervising. Note that in most of the cases, the PhD students are the main developer of these codes, not me.

- 2020-2024 **Velocity Skinning**, *Damien Rohmer*, EG, C++, JavaScript.
I developed multiple open-source code and demonstrators for the Velocity/Dynamic Skinning project. The Eurographics paper was associated with the replicability Stamp.
◦ *Velocity Skinning Webpage*: <https://velocityskinning.com/>
- 2023 **Robust Pointset Denoising via Line Processes**, *Jiayi Wei*, Eurographics, C++.
<https://github.com/kwwei/line-process-pointset-denoising>
- 2022 **Real-Time Locomotion on Soft Grounds With Dynamic Footprints**, *Eduardo Alvarado*, Frontiers, Unity.
<https://github.com/edualvarado/unity-footprints>
- 2021 **Acceleration Skinning**, *Niranjana Kalyanasudaram*, GI, C++.
github.com/nkmultimedia/acceleration-skinning
- 2021 **Volcanic plume**, *Maud Lastic*, I3D, C++.
<https://gitlab.com/mlastic/volcanicplume>
- 2019 **Dendry: A Procedural Model for Dendritic Patterns**, *Mathieu Gaillard*, I3D, C++.
<https://github.com/mgaillard/Noise>
- 2019 **Implicit Untangling : A Robust Method for Modeling Layered Clothing**, *Thomas Buffet*, SIGGRAPH, C++.
<https://gitlab.com/TBuffet/implicit-untangling>
- 2019 **NEM - Nested Explorative Maps**, *Pauline Olivier*, SMI, JavaScript.
Link to NEM demonstrator
- 2018 **Neural-Meta-Tracts - Fiber Reductor**, *Corentin Mercier*, VCBM, C++.
<https://github.com/CorentinMercier/neural-meta-tracts>
- 2015 **Replaceable Substructures for Efficient Part-Based Modeling**, *Han Liu, Ulysse Vimont*, Eurographics, C++, Blender.
Code ZIP

Faculty administration and management

Main administrative responsibility

- 2023 - **Vice-President DIX.**
Vice-President of the Department of Informatics. In charge of teaching.
- 2019 - **Head of VISTA.**
In charge of the research team VISTA at LIX.

Working groups

- 2020 - **Conseil de Laboratoire LIX**, *Member*.
General discussion and evolution of the lab.
- 2020 - **Comission Informatique LIX**, *Member*.
Problems related to IT resources at the lab.
- 2020 - **Comission Web LIX**, *Member*.
Evolution of the lab website.

Involvement in Scientific Community and Associations

Administration and steering committee

- 2023 - **MIG**, *Chair of Steering Committee*.
Permanent chair of the steering committee for the Motion, Interaction and Games annual conference, with the sponsor of ACM SIGGRAPH/Eurographics.
- 2015 - **AFIG**, *Steering Committee Member*.
Association Francaise d'Informatique Graphique.
In charge of website, communication, jobs and company listings.
- 2021 - **AFIG-teaching**, *Member*.
Working group about teaching aspects in CG at the National level.

Award Jury

- 2024 - **EGFR Best Thesis**, *Jury Member*.
Member of the jury for the Best thesis award of EGFR in association with the GDR IG-RV.
- 2020-2024 **EGFR Young Research Fellow**, *Jury Member*.
Young Research Fellow committee member for GDR IGRV and EGFR (Eurographics France)
- 2022 **Eurographics Best Paper**, *Jury Member*.
- 2012-2019 **EGFR/AFIG Best Paper**, *Jury Member*.
Reviewer and member of the committee to select the best paper for the AFIG annual conference.

Conferences

International conference chair

- 2023 **IMET**, *Program Chair*, Barcelona.
- 2021 **MIG**, *Program Chair*, Lausanne.
- 2018 **SCA**, *General Chair*, Paris.

National conference organization

- 2019 **GTMG**, *Co-Organizer*, Paris.
- 2015 **JIG**, *Co-Organizer*, Marnes la vallée.
- 2011 **GTMG**, *Co-Organizer*, Grenoble.

International Program Committee Member

Eurographics.

- *Full papers*: 2021, 2022
- *Short papers*: 2014, 2015, 2021
- *Doctoral consortium*: 2021

SIGGRAPH.

- *General submission*: 2020, 2022

SIGGRAPH Asia.

- *Technical Brief and Posters*: 2013, 2014, 2015, 2018
- *Course*: 2021, 2022

SCA, Symposium on Computer Animation.

2019, 2020, 2021, 2022, 2024

MIG, Motion, Interaction and Games.

2020, 2022, 2023, 2024

Pacific Graphics.

2023

SMI, Shape Modeling International.

2021

SMI-FASE (Fabrication and Sculpting Event): 2016, 2017, 2018, 2019

SPM, Solid and Physical Modeling.

2016, 2017

CASA, Computer Animation and Social Agents.

2023

IMET, Interactive Media, Smart Systems and Emerging Technologies.

2022

Review

I am a regular reviewer for the conference mentioned previously when not in their IPC. In addition, I am a regular reviewer for the following journals: ACM TOG, CGF, IEEE TVCG, CG&A.

Invited Talk

- 2023 **LIX Seminar, Talk**, Real-Time Expressive Dynamic Animation for Skeleton Based Character.
- 2023 **Inria Sophia Antipolis Workshop, Talk**, Real-Time Expressive Dynamic Animation for Skeleton Based Character.
- 2022 **AFIG, Bordeaux, Short Talk**, CGP library for teaching Graphics. Intervention in the round-table at the journées d'informatique graphique.
- 2022 **GTAS, Vannes, Short Talk**, CGP library for teaching Graphics.
- 2022 **Roblox visit, Paris, Short Talk**, Research in Video Games.

- 2022 **Ubisoft, workshop chair ScienceXGames, Paris**, *Short Talk*, Research in Video Games.
- 2021 **Clemson University, School of Computing Events**, *Talk*, Velocity Skinning.
- 2019 **CLIFE Summer School**, *Talk*, Expressive character animation.
- 2017 **SIAM-GD**, *Keynote*, Efficient Developable Surface Modeling: From Garment Design to Paper Animation.
- 2016 **R3iLAB**, *Talk*, Virtual Garment Design.

Dissemination to the general public

General presentation

- 2023 **Table ronde CNAM**, *Paris*, Les Mathématiques des jeux & jeux vidéo.
- 2022 **Presentation ENS Paris Saclay**, Recherche en informatique graphique.
- 2019 **Presentation Semaine des Maths**, *Annonay*, Créer et interagir avec les mondes virtuels 3D.
- 2018 **Presentation Fête de la science**, *Annonay*, Les mondes virtuels 3D.
- 2016 **Presentation Maison des Mathématiques et de l'Informatique**, *Lyon*, Production d'images scientifiques.
- 2016 **Presentation ENS Lyon**, Recherche en informatique graphique.
- 2014 **Article in diffusion journal Quadrature**.
- 2008-2009 **Journal Universitaire Vision Croisées**.
Member of the editorial committee

Specific topics

- 2022-2023 **Generative AI impacts**.
I have been interviewed to discuss about the impact on Generative AI on the society.
 - **2023, Science & Vie** Le bouleversement ChatGPT : quels impacts sur le monde réel ?
 - **2022, France Culture** Quel sera l'impact de Dall-E sur les métiers de la création d'images?

2012-2020 **Flat Torus, Hevea project.**

I have been involved in the Hevea project (<https://hevea-project.fr/>) regarding the first generation of the Flat Torus, and in the subsequent article about the reduced sphere. This led to wide coverage from scientific and general public press that have been illustrated by the images I generated.

- Major covers:
 - **Cover of the Proceedings of the National Academy of Sciences** PNAS, 109(19) 2012.
 - **Movie Documentary "Ils ont eu raison du tore" - 52 min** Geoffroy & Dominique Garing, 2020.
- In press:
 - **Pour la Science**, Les fractales lisses, un nouvel objet mathématique, n. 245, 2013.
 - **La Recherche**, Les 10 plus belles découvertes de l'année, n. 471, 2013.
 - **La Recherche**, Le tore plat carré visualisé grâce à l'informatique, n. 467, 2012.
 - **Science et Vie**, Le tore plat n'a plus de secret, n. 1138, 2012.
 - **CNRS Le Journal**, Une beauté fractale en 3D, n. 267, 2012.
- Covered during special events:
 - Presentation for the **Prix Abel** decerned to **John Nash**, 2015.
 - Displayed on the large corridor in **Station Montparnass metro**, from January to march 2014.
 - **Fête de la science** in Paris and Lyon, 2013.

Recruitment committee (COS)

- 2024 **Université de Bordeaux**, *MdC en informatique graphique*, Membre.
- 2024 **École polytechnique**, *Professeur et professeur assistant temps incomplet*, Président.
- 2024 **École polytechnique**, *Professeur et professeur assistant en cybersécurité*, Membre.
- 2024 **ENSTA**, *Professeur et professeur assistant*, Membre.
- 2023 **École polytechnique**, *Professeur et professeur assistant temps incomplet*, Président.
- 2023 **Paris 8**, *MdC en informatique graphique*, Membre.
- 2022 **École polytechnique**, *Professeur et professeur assistant temps incomplet*, Membre.
- 2021 **École polytechnique**, *Professeur et professeur assistant temps incomplet*, Membre.
- 2020 **École polytechnique**, *Professeur assistant en IA*, Membre.
- 2019 **École polytechnique**, *Professeur en Cybersécurité*, Membre.

PhD Jury committee

- 2024 **Guillaume Gisbert**, *Université de Lyon*, Rapporteur.
- 2024 **Nicolas Barroso**, *Université de Toulouse*, Rapporteur.
- 2024 **Glenn Kerbirou**, *Université de Rennes*, Rapporteur.
- 2024 **Olivier Pradelle**, *Université de Lyon*, Président.
- 2023 **Lucas Mourot**, *Université de Rennes 1*, Rapporteur.
- 2023 **Tong Zhao**, *Université Cote d'Azur*, Rapporteur.
- 2023 **Emilie Yu**, *Université Cote d'Azur*, Rapporteur.
- 2023 **Clément Lemeunier**, *Université de Lyon*, Rapporteur.

- 2022 **Elie Michel**, *Institut Polytechnique de Paris*, Examineur.
- 2022 **Adèle Colas**, *Université de Rennes 1*, Rapporteur.
- 2021 **Raphael Charrodière**, *Université Grenoble Alpes*, Examineur.
- 2021 **Eloise Berson**, *Université Bretagne Loire*, Rapporteur.
- 2021 **Camille Brunel**, *Université de Bordeaux*, Rapporteur.
- 2020 **Xiyao Wang**, *Université Paris Saclay*, Président.
- 2019 **Clément Reverdy**, *Université Bretagne Sud*, Président.
- 2018 **Valentin Roussellet**, *Université Paul Sabatier, Toulouse*, Rapporteur.

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- [2] Eduardo Alvarado, Oscar Argudo, Damien Rohmer, Marie-Paule Cani, Nuria Pelechano. TRAIL: Simulating the Impact of Human Locomotion on Natural Landscapes. **Computer Graphics International (CGI)**, 2024.
- [3] David-henri Garnier, Martin-Pierre Schmidt, Damien Rohmer. PhysOM: Physarum polychelalum Oriented Microstructures. **Computer Graphics Forum**, 2024.
- [4] Cilliers Pretorius, James Gain, Maud Lastic, Guillaume Cordonnier, Jiong Chen, Damien Rohmer, Marie-Paule Cani. Volcanic Skies: coupling explosive eruptions with atmospheric simulation to create consistent skylscapes. **Eurographics, Computer Graphics Forum**, 2024.
- [5] Auguste de Lambilly, Gabriel Benedetti, Nour Rizk, Chen Hanqi, Siyuan Huang, Junnan Qiu, David Louapre, Raphael Granier de Cassagnac, Damien Rohmer. Heat Simulation on Meshless Crafted-Made Shapes. **MIG**, 2023.
- [6] Xianjin Gong, Amal Dev Parakkat, Damien Rohmer. Collision Free Simplification for 2D Multi-Layered Shapes. **IMET**, 2023.
- [7] Jiayi Wei, Jiong Chen, Damien Rohmer, Pooran Memari, Mathieu Desbrun. Robust Pointset Denoising of Piecewise-Smooth Surfaces through Line Processes. **Eurographics, Computer Graphics Forum**, 2023.
- [8] David-Henri Garnier, Martin-Pierre Schmidt, Damien Rohmer. Growth of oriented orthotropic structures with reaction/diffusion. **Structural and Multidisciplinary Optimization**, 2022.
- [9] Eduardo Alvarado, Damien Rohmer, Marie-Paule Cani. Generating Upper-Body Motion for Real-Time Characters Making their Way through Dynamic Environments. **SCA, Computer Graphics Forum**, 2022.
- [10] Weijie Tao, Damien Rohmer, Grant T Gullberg, Youngho Seo, Qiu Huang. An Analytical Algorithm for Tensor Tomography from Projections Acquired about Three Axes. **IEEE Transactions on Medical Imaging**, 2022.
- [11] Niranjana Kalyanasundaram, Damien Rohmer, Victor Zordan. Acceleration Skinning: Kinematics-Driven Cartoon Effects for Articulated Characters. **Graphics Interface**, 2022.

- [12] Maud Lastic, Damien Rohmer, Guillaume Cordonnier, Claude Jaupart, Fabrice Neyret, Marie-Paule Cani. Interactive simulation of plume and pyroclastic volcanic ejections. **I3D, PACM-CGIT**, 2022.
- [13] Eduardo Alvarado, Chloé Paliard, Damien Rohmer, Marie-Paule Cani. Real-Time Locomotion on Soft Grounds With Dynamic Footprints. **Frontiers in Virtual Reality**, 2022.
- [14] Amélie Fondevilla, Damien Rohmer, Stefanie Hahmann, Adrien Bousseau, Marie-Paule Cani. Fashion Transfer: Dressing 3D Characters from Stylized Fashion Sketches. **Computer Graphics Forum**, 2021.
- [15] Damien Rohmer, Marco Tarini, Niranjan Kalyanasundaram, Faezeh Moshfeghifar, Marie-Paule Cani, Victor Zordan. Velocity Skinning for Real-time Stylized Skeletal Animation. **Eurographics, Computer Graphics Forum**, 2021.
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- [17] Pauline Olivier, Renaud Chabrier, Damien Rohmer, Eric de Thoisy, Marie-Paule Cani. Nested Explorative Maps: A new 3D canvas for conceptual design in architecture. **SMI, Computer and Graphics**, 2019.
- [18] Mathieu Gaillard, Bedrich Benes, Eric Guérin, Eric Galin, Damien Rohmer, Marie-Paule Cani. Dendry: A Procedural Model for Dendritic Patterns. **I3D**, 2019.
- [19] Thomas Buffet, Damien Rohmer, Loic Barthe, Laurence Boissieux, Marie-Paule Cani. Implicit Untangling: A Robust Solution for Modeling Layered Clothing. **ACM SIGGRAPH, Transactions on Graphics**, 2019.
- [20] Corentin Mercier, Pietro Gori, D. Rohmer, Marie-Paule Cani, T Boubekeur, Jean-Marc Thiery, Isabelle Bloch. Progressive and Efficient Multi-Resolution Representations for Brain Tractograms. **VCBM**, 2018.
- [21] Evangelis Bartzos, Vincent Borrelli, Roland Denis, Francis Lazarus, Damien Rohmer, Boris Thibert. An Explicit Isometric Reduction of the Unit Sphere into an Arbitrarily Small Ball. **Foundations of Computational Mathematics**, 2018.
- [22] Camille Schreck, Damien Rohmer, Stefanie Hahmann. Interactive paper tearing. **Computer Graphics Forum**, 2017.
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- [37] Damien Rohmer, Stefanie Hahmann, Marie-Paule Cani. Local volume preservation for skinned characters. **Pacific Graphics, Computer Graphics Forum**, 2008.
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