

*Inria*

RESEARCH CENTER  
Grenoble - Rhône-Alpes

FIELD

Activity Report 2019

# Section Popularization

Edition: 2020-03-21



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## ARIC Project-Team

### 10.3. Popularization

#### 10.3.1. Internal or external Inria responsibilities

- Nathalie Revol was in the scientific committee for the Journées Scientifiques Inria (Lyon, 5-7 June 2019).
- Nathalie Revol was a member of the editorial committee of *interstices*; she is the scientific editor of this Web magazine since September 2019.
- Nathalie Revol belonged to the steering committee of MMI (Maison des Mathématiques et de l'Informatique) until July 2019; she is now a member of its prospective committee.
- Bruno Salvy is "réfèrent chercheur" for the Inria Grenoble Center.

#### 10.3.2. Articles and contents

Nathalie Revol belonged to the working group that elaborated the "7 families of computer science" playcards, launched in February 2019.

#### 10.3.3. Education

- Nathalie Revol taught "Dissemination of Scientific Knowledge", 10h, to the 4th year students (between Master and PhD) of ENS de Lyon, France.
- Nathalie Revol works with DANE (Délégation Académique au Numérique dans l'Éducation) of Rectorat de Lyon towards educating primary school teachers, by educating educators (e-RUN); she is a member of the Conseil Scientifique du Numérique.
- Nathalie Revol presented activities for teaching computer science at every school level, and in particular activities led by Inria, for a Taiwanese delegation (Grenoble, October 2019).

#### 10.3.4. Interventions

- Nathalie Revol spent 2 days at école Guilloux, with 50 pupils aged 10 (level: CM2), to teach computer science without any computer (so-called "unplugged computer science"): data, algorithms, networks.
- For high-school pupils ( $\simeq$  150 pupils): as an incentive, especially for girls, to choose scientific careers, Nathalie Revol gave talks at Mondial des Métiers (in February 2019), collège Jean Zay (Brignais, March 2019) and Girls Can Code (Lyon, August 2019). With Jérôme Germoni and Natacha Portier, she organized a day *Filles & Info* in November 2019, gathering about 70 high-school girls of 1e and Terminale.
- For a larger audience: she took part to Pop Science, doing magic tricks in the street at La Duchère, Lyon, May 2019; with Florent Masségli, she introduced 5 important figures of computer science, chosen among the personalities of the "7 families of computer science" playcard, for L'Esprit Sorcier, for la Fête de la Science, Paris, October 2019, cf <https://www.youtube.com/watch?v=yppnQe91Pztc>
- Nathalie Revol took part to a day of teaching unplugged computer science for whoever was interested, at La Gaîté Lyrique, Paris, June 2019.

#### 10.3.5. Creation of media or tools for science outreach

Nathalie Revol belongs to the working group "Informatique Sans Ordinateur", which creates unplugged activities to teach computer science; this group meets twice a year, usually in Lyon.

## **CASH Project-Team**

### **9.3. Popularization**

#### **9.3.1. Articles and contents**

- “Pourquoi créer des nouveaux langages de programmation?” Ludovic Henrio. Interstices. Janvier 2019.

#### **9.3.2. Education**

- Laure Gonnord has participated to the construction of the diploma “teaching computer science in high schools” in Lyon, and also the new preparatory cursus for the “CAPES-NSI” at Lyon1 university.

#### **9.3.3. Interventions**

- Laure Gonnord was invited by the “Association des profs de Prepa” to give her expertise about teaching computer science in the first university cycle. The context is the creation of a new preparatory class with a computer science minor “MPI” (Maths, Physics, Computer Science).
- Matthieu Moy presented a talk “Se lancer dans le logiciel libre quand on est étudiant (ou pas)” at “Campus du libre”, Lyon.

## CONVECS Project-Team

### 10.3. Popularization

#### 10.3.1. Interventions

- R. Mateescu has participated to the “*Journée Transfo : Plongez dans le monde du numérique*” organized at Inria Montbonnot on January 24, 2019.
- R. Mateescu has participated to the “*Fête de la Science*” organized at Inria Montbonnot on October 12, 2019.

## **CORSE Project-Team**

### **9.3. Popularization**

#### **9.3.1. Education**

DIU EIL, Florent Bouchez Tichadou, Formation des enseignants des lycées suite à la réforme du Bac et l'introduction de l'option informatique en 1ère et Terminale (NSI). Bloc algorithmique par Apprentissage Par Problèmes (APP). Académie de Grenoble ainsi que les enseignants dans les lycées français à l'étranger.



## **DATASPHERE Team**

### **9.3. Popularization**

Various publications have appeared in journals accessible to a larger audience. In particular, our research work has been featured in a full page of Le Monde newspaper in July 2019 ([https://www.lemonde.fr/international/visuel/2018/07/23/cyberespace-la-guerre-mondiale-des-donnees\\_5334901\\_3210.html](https://www.lemonde.fr/international/visuel/2018/07/23/cyberespace-la-guerre-mondiale-des-donnees_5334901_3210.html)).

Kavé Salamatian did several radio intervention, in particular, he was invited in the "Methode Scientifique" broadcasting program in November 2019.

## PRIVATICS Project-Team

### 8.3. Popularization

#### 8.3.1. Hearings

- Claude Castelluccia: *audition at the Council of Europe on AI & Human Rights*, European Parliament, 05/2019, Paris, France.

#### 8.3.2. Internal or external Inria responsibilities

- Claude Castelluccia is co-leader of the Workpackage 5 (data governance and privacy) of the Grenoble Data Institute.
- Claude Castelluccia is co-leader of Grenoble CyberAlps (cybersecurity institute of Grenoble).
- Claude Castelluccia is a member of the Grenoble AI institute (MIAI)
- Daniel Le Métayer is a member of the European Commission Multistakeholder expert group to support the application of General Data Protection Regulation (GDPR).
- Daniel Le Métayer is Chair of the CNIL-Inria privacy award.
- Daniel Le Métayer is a member of the steering committee of APVP (Atelier Protection de la Vie Privée).
- Daniel Le Métayer is a member of the steering committee of the chair « Transformation de l'action publique » of Sciences Po Lyon.
- Antoine Boutet is the communication manager of CITI laboratory.
- Antoine Boutet is the manager the Cybersecurity and privacy option of the 5th year of computer science at INSA-Lyon.
- Cédric Lauradoux is a representative of Inria ethical committee COERLE at Inria Grenoble Rhone-Alpes.
- Cédric Lauradoux is a member of the scientific committee of the research action "Cyber-Physical System" of Labex Persyval (Grenoble).
- Cédric Lauradoux is a member of the ethics committee of ComUE Université Grenoble Alpes.
- Cédric Lauradoux is a member of Inria Grenoble Rhône-Alpes committee for technological development.
- Vincent Roca is the PRIVATICS Team Leader (since Nov. 2020).
- Vincent Roca is the co-chair of the NWCRCG ("Coding for Efficient Network Communications" Research Group), Internet Research Task Force (IRTF) / IETF.
- Vincent Roca is the ANR 2017 DAPCODS/IOTics project leader.
- Vincent Roca is the chair of the CUMI ("Commission des Utilisateurs des Moyens Informatiques") of Inria Grenoble Rhone-Alpes.
- Vincent Roca is a member of Inria ethical committee COERLE.
- Vincent Roca is co-editor (with Ludovic Mé and Steve Kremer) of a series of articles dedicated to cybersecurity on the Blog Binaire, Le Monde.

#### 8.3.3. Articles and contents

- Antoine Boutet et Mathieu Cunche: *Souriez, vous êtes géolocalisés !*, "Tout compte fait", 06/05/2019
- Antoine Boutet: *L'algorithme : cette formule arbitraire, miroir de l'intention humaine*, En Vue (INSA Lyon newsletter), 18/12/2019 .

- Claude Castelluccia: *Manipulation informationnelle et psychologique*, Le blog binaire du Monde, 05/2018.
- Mathieu Cunche: *Des chercheurs français découvrent des fuites d'informations sensibles sur les appareils Apple*, Science et Avenir.fr, 16/12/2019.
- Mathieu Cunche, *Vers une reconnaissance faciale généralisée*, Techniques de l'ingénieur, 05/12/2019.
- Cédric Lauradoux, *Bientôt un identifiant numérique pour tous*, Les Echos, 07/05/2019.
- Cédric Lauradoux, *Facebook, mon fil d'actu, ma bataille*, Mediapart, 05/12/2019.
- Daniel Le Métayer and Claude Castelluccia: *Algorithmic decision making : risks and opportunities for society*, Inria Interview, 25/06/2019.
- Daniel Le Métayer: *Interview about algorithmic decision systems.*, Atlantico, 21/09/2019.
- Vincent Roca and Cédric Lauradoux: *Prêts à tout pour protéger leurs données*, 01NET, 02/10/2019.
- Vincent Roca: *Suite au Livre Blanc Inria sur la cybersécurité : L'ordinateur quantique est une menace pour une partie des techniques de chiffrement actuellement utilisée*, L'Hebdo, BFM Business, 09/02/2019.
- Vincent Roca: *Les objets connectés nous espionnent-ils ?*, "Les Idées Claires", France Culture, 12/03/2019.
- Vincent Roca: *Rencontre Sciences et Politique : Cybersécurité*, Académie des sciences - Académie nationale de médecine - Office parlementaire d'évaluation des choix scientifiques et technologiques (OPECST), Sénat, 19/06/2019.
- Vincent Roca: *Objets connectés et vie privée*, Les Echos, 20/03/2019.
- Vincent Roca: *Nouvelles technologies : tous espionnés*, Journal de 20 Heures, France 2, 12/04/2019.
- Vincent Roca: *Vie privée et maison intelligente*, Café des Sciences, 14/05/2019, Grenoble, France.

#### 8.3.4. Education

- Nataliia Bielova: *Animation du forum du MOOC Protection de la vie privée dans le monde numérique*, May-June 2019.
- Antoine Boutet: *Contest of data anonymization between three different groups of INSA students (from Lyon and Bourges)*, 25-26/11/19.
- Cédric Lauradoux: *Action vie privée*, Maison pour la science, 14/02/2019, Grenoble, France.
- Cédric Lauradoux: *Protéger sa vie privée*, DIU EIL (enseignant d'informatique au lycée), 12/04/2019, Grenoble, France.
- Cédric Lauradoux: *Animation du forum du MOOC Protection de la vie privée dans le monde numérique*, May-June 2019.
- Vincent Roca: *Animation du forum du MOOC Protection de la vie privée dans le monde numérique*, May-June 2019.

#### 8.3.5. Interventions

- Mathieu Cunche: *Cybersécurité: Protéger ses objets physiques*, Pint of science, 22/05/2019, Lyon, France.
- Cédric Lauradoux: *Procès du robot 42*, Festival TRANSFO, 24/01/2019, Grenoble, France.
- Cédric Lauradoux: *Challenges de cryptologie*, Printemps du numérique, 08/04/19, Die, France.
- Cédric Lauradoux: *Challenges de cryptologie*, MathC2+ internship, 25/06/19, Grenoble, France.
- Cédric Lauradoux: *Atelier cryptographie*, Fête de la Science, 10/10/2019, Grenoble, France.
- Cédric Lauradoux: *Procès du robot 42*, Fête de la Science, 12/10/2019, Grenoble, France.
- Cédric Lauradoux: *Les données en question*, Festival Imaginascience, 16/10/2019, Annecy, France.

- Cédric Lauradoux: *Le Numérique nous menace-t-il ?*, Telecom Saint Etienne, 03/12/2019, Saint Etienne, France.
- Cédric Lauradoux: *Vie privée et Liberté dans le monde numérique*, Collège Les Dauphins, 03/12/2019, Saint Jean de Soudain, France.
- Cédric Lauradoux: *Challenges de cryptologie*, Cité scolaire Jean PREVOST, 12/12/2019, Villard de Lans, France.
- Cédric Lauradoux: *Avoir un usage Internet éclairé*, UIAD, 18/12/2019, Grenoble, France.
- Vincent Roca: *Maison intelligente : le point de vue du respect de la vie privée*, Café des Sciences, 14/05/2019, Grenoble, France.
- Vincent Roca: *Habitat intelligent, service de vélo partagé et vie privée*, Fête de la Science, 12/10/2019, Grenoble, France.

### **8.3.6. Internal action**

- Cédric Lauradoux: *Formation Éthique*, Inria Paris, 26/01/2019, Paris, France.
- Cédric Lauradoux: *Formation Éthique*, Inria Saclay, 25/04/2019, Saclay, France.
- Cédric Lauradoux: *Formation Éthique*, Inria Grenoble - Rhône-Alpes, 13/05/2019, Lyon, France.
- Cédric Lauradoux: *Rules of Cyber Engagement*, Inria JSI, 07/06/2019, Lyon, France.
- Cédric Lauradoux: *Privacy: Understanding the GDPR*, Inria Grenoble - Rhône-Alpes, 15/10/2019, Grenoble, France.
- Vincent Roca: *Sécurité numérique : technique, éthique, juridique : qui s'y frotte s'y pique (moderator)*, Inria JSI, 07/06/2019, Lyon, France.

## **SPADES Project-Team**

### **9.4. Popularization**

#### ***9.4.1. Articles and contents***

Software is a fundamental pillar of modern scientific research, across all fields and disciplines. However, there is a lack of adequate means to cite and reference software due to the complexity of the problem in terms of authorship, roles and credits. This complexity is further increased when it is considered over the lifetime of a software that can span up to several decades. Building upon the internal experience of Inria, we have provided a contribution to the ongoing efforts in order to develop proper guidelines and recommendations for software citation and reference. Namely, we recommend: (1) a richer taxonomy for software contributions with a qualitative scale; (2) to put humans at the heart of the evaluation; and (3) to distinguish citation from reference [10]. This has been a joint work between Alain Girault and colleagues from Software Heritage (Roberto Di Cosmo), from Inria's Evaluation Committee (Pierre Alliez, Benjamin Guedj, Mohand-Saïd Hacid, Nicolas Rougier), and a specialist in reproducible research (Arnaud Legrand).

#### ***9.4.2. Interventions***

Sophie Quinton played the role of one of the experts in the fictional trial of a robot during the Transfo Festival in Grenoble. She also gave a lecture on the design and verification of real-time systems as part of the ISN curriculum for high school teachers.

Alain Girault played the role of one of the experts in the fictional trial of a robot during the Fête de la Science in Grenoble.

#### ***9.4.3. Creation of media or tools for science outreach***

All SPADES members have contributed to the scenario of an animated movie, commissioned by the communication service of Inria, in order to popularise the research activities of SPADES.

## **ELAN Project-Team**

### **9.3. Popularization**

#### **9.3.1. Articles and contents**

- Focus on our cloth simulator **Argus**, on a **video** prepared by A. Aftalion and published in February 2019 in <http://video.math.cnrs.fr>.

## **MISTIS Project-Team**

### **10.3. Popularization**

#### ***10.3.1. Interventions***

- Sophie Achard has been invited to Festival des Nouvelles Explorations <https://nouvelleexplorations.com/>.
- Julyan Arbel gave a presentation for ISN conference, March 2019.

**NANO-D Team (section vide)**



## **NECS Team**

### **10.3. Popularization**

#### ***10.3.1. Education***

Maria Laura Delle Monache gave a talk to students of 8th grade (4ème) and 11th Grade (1ère) in the Cérémonie de remise de prix des Olympiades de Mathématiques, La mobilité et les véhicules autonomes, , Université Grenoble Alpes, France, May 2019.

**TRIPOP Project-Team (section vide)**

## AIRSEA Project-Team

### 9.3. Popularization

#### 9.3.1. Internal or external Inria responsibilities

E.Kazantsev is a member of the Local Commission for Permanent Formation of Inria Grenoble - Rhône-Alpes.

#### 9.3.2. Education

Ch. Kazantsev and E. Blayo are strongly involved in the creation and dissemination of pedagogic suitcases with mathematical activities designed for primary and secondary school (used by 10,000 – 12,000 pupils in 2018-2019). This is done in collaboration with the Rectorat de Grenoble.

E. Arnaud has animation of a "laboratoire des mathématiques", Pablo Neruda School, Saint Martin d'Hères

C. Kazantsev is a member of an IREM group for creation of scientific activities for professional development of secondary schools teachers.

C. Kazantsev is a member of an International Inter-IREM commission, which work on the multi-languages problem for children in the mathematical learning. Three meetings take place in Paris during the year, the first was on September 28.

C. Kazantsev participated to the collaboration program with the Ecole Normale Supérieure de Bamako, Mali. She spent ten days in Bamako to present the modelisation teaching and the purpose and activities of "La Grange des Maths" group. Bamako, ENSup, January, 13-25

C. Kazantsev participated to the "Colloque du cinquantenaire des IREM" with a presentation of the activities of "La Grange des Maths", Besançon, May, 9-11

#### 9.3.3. Interventions

National events:

Ch. Kazantsev and E. Blayo are strongly involved in the creation of "La Grange des maths", a science popularization center that will be located in Varcès (south of Grenoble), which will offer a huge variety of mathematical hands-on exhibits. See <http://www.la-grange-des-maths.fr/>

Ch. Kazantsev participated at the "Culture and mathematical games Salon", Place St Sulpice, Paris, 23-26 May.

Ch. Kazantsev and E. Blayo participated in the "Fête de la Science", October, 12.

E. Arnaud. gave a presentation "(Se) tromper avec les chiffres" at the conference "Sciences et esprit critique, interroger les certitudes", Maison pour la sciences, Académie de Grenoble, 8 nov. 2018, Grenoble.

Public exhibitions

C.Kazantsev participated in the "Oriel des Maths" and in the "Forum des associations" with the presentation of the "La Grange des Maths" center and its activities. Varcès, March, 10.

C.Kazantsev participated at the "Remue-méninges festival" with the presentation of the "Maths à modeler" activities. Echirolles, April, 11.

C.Kazantsev participated to the "Sou des écoles", with the presentation of the "La Grange des Maths" activities. Varcès, June, 15.

C.Kazantsev participated at the "Raout de Domène" with the presentation of mathematical animations. Domene, September, 1.

In educational institutions

E. Blayo gave several outreach talks, in particular for middle school and high school students, and for more general audiences.

C.Kazantsev presented mathematical animations to pupils of the Jean Mermoz school in Poizat for about 80 children during 3 hours. Poizat, May, 29.

E. Arnaud gave a talk "(Se) tromper avec les chiffres" for pupils of secondary schools on the 8th of March 2019 and the 2nd of May 2019.

#### ***9.3.4. Creation of media or tools for science outreach***

C.Kazantsev participated in the edition of the Teachers notebooks which explain and advise how to use the "La Grange Suitcases" (sets of mathematical games, problems and animations) destined for primary and secondary schools teachers as well as for the general public.

C.Kazantsev participated in the creation of mathematical activities that can be autonomously used by schoolchildren of primary and secondary schools and by the general public.

E. Arnaud, in charge of the UGA Idex project math@uga : implementation of a collaborative moodle platform <http://math.u-ga.fr> to share pedagogical resources within teachers and towards students.

E. Arnaud, participation to UGA Idex projects Caseine and data@ugat

## BEAGLE Project-Team

### 9.3. Popularization

#### 9.3.1. Articles and contents

- Hugues Berry participated in popularization activities with the edition of a book, written in French, on the relationships between sex (i.e. a biology concept) and Gender (a sociology approach) (Abou, B. and Berry, H., eds., (2019). *Sexe et Genre: de la Biologie a la Sociologie*. Editions Materiologiques, Paris, <https://materiologiques.com/sciences-philosophie-2275-9948/282-sexe-et-genre-de-la-biologie-a-la-sociologie.html>) In recent years, debates about sex and gender concepts between biology and the humanities and social sciences have become more intense, both for scientific reasons and for their societal impacts. Many biologists reject the questioning made by researchers in humanities and social sciences, of what biology considers fundamental, such as sex binarity or sex differences. Humanities and social scientists, on the other hand, often see biology as an academic and institutional source of naturalistic arguments used to oppose gender studies. They denounce biases in the interpretation of biologists as resulting, precisely, from gender-related biases. However, scientific exchanges at the interface between biology and the humanities and social sciences are undoubtedly necessary to overcome these antagonisms. The objective of this book is to implement a dialogue between the two fields, trying to overcome misunderstandings and misconceptions that have gone on for long. The book consists in 12 chapters stemming from biologists and sociologists, organized so as to try and foster dialogue between both communities. The target readership of the book is composed of non specialist readers (in particular non biologists nor sociologists) with a pre-existing interest on gender issues and their relations to biology. That is why the book was written in French and includes chapters intended to newcomers in the field (e.g. "The determination of sex in the human species and the rest of life" or "Why Gender?") to more advanced viewpoints ("What we learn from transidentities"). The objective of the publisher was to publish a reference book in French on the relations between sex and gender.
- "Le mouvement est devenu massif", an interview of Hugues Berry to the French journal L'Usine Nouvelle, Special Edition "A year of simulation", number 3608, April 25, 2019. <https://www.usinenouvelle.com/editorial/le-mouvement-est-devenu-massif.N834680>
- Eric Tannier is a co-author of "Quand les branches de l'arbre du vivant s'entremêlent", in *Pour la science*, 2019.

#### 9.3.2. Education

- We have an ongoing collaboration with the Grenoble Rectorat. The aim is to use our computational models to train school professor to evolutionary concepts.

#### 9.3.3. Interventions

- Audrey Denizot participated to activities in the mediation association DéMesures:
  - "Cosmograff" project. This project aims to present the solar system and its scales to the general public, in collaboration with the Musée des Confluences and the collective of street artists Superposition <https://bit.ly/35gtYpI>. Creation of audio guides in French and English for reuse at the 2019 EWASS international astronomy conference. <https://bit.ly/2rQIB5y>
  - "ArtScience" project, which aims to present the work of scientists to artists. This project culminated in an artistic exhibition at the ENS Lyon, from April to July 2019, in collaboration with the Taverne Gutenberg <https://bit.ly/2OldNR3>. Creation of a series of photographs presenting the links between science and art that emerged from this project <https://bit.ly/2XqjaCz>.
- Eric Tannier co-organized a citizen science event at the Théâtre Nouvelle Génération, Vaise, december 2019

- Eric Tannier organizes a workshop on environmental responsibility of researchers in January 2020
- Eric Tannier participated to a "pint of science" evening on the social and environmental responsibility of researchers, May 20, 2019

#### ***9.3.4. Internal action***

- Eric Tannier and Carole Knibbe gave a lecture on environmental responsibility at the Inria Bio days, 2019
- Eric Tannier gave a training to PhD students on research ethics, 6h, Inria Grenoble Rhône-Alpes, January 2019

#### ***9.3.5. Creation of media or tools for science outreach***

- We developed the GreenMice game, a small video-game designed to teach the basis of evolutionary biology to young children

## DRACULA Project-Team

### 7.3. Popularization

#### 7.3.1. Articles and contents

- Laurent Pujo-Menjouet : Radio (France Inter), la tête au carré, <https://www.franceinter.fr/emissions/la-tete-au-carre/la-tete-au-carre-10-mai-2019>
- Laurent Pujo-Menjouet : Radio (Europe 1), Wendy Bouchard, <https://www.europe1.fr/emissions/on-fait-le-tour-de-la-question-avec-wendy-bouchard/wendy-bouchard-aujourd'hui-alchimie-equation-formule-magique-lamour-est-il-le-fruit-du-hasard-3905606>
- Laurent Pujo-Menjouet : Radio (Québec), <https://www.qub.radio/balado?id=6bb8beb9-9bb3-493f-abe3-aa7100f60a73&episode=3f6e7a5c-b11a-45ff-aa28-aa96015f517b&fbclid=IwAR2DUNgo-QvKh3z9oGeslTJOnCa3f5GzTYWIIGrYSe5hrm7ydSgc1gW6Z5g>
- Laurent Pujo-Menjouet : Radio Canada, <https://ici.radio-canada.ca/premiere/emissions/region-zero-8/episodes/439145/audio-fil-du-vendredi-26-juillet-2019/10>
- Laurent Pujo-Menjouet : Presse écrite (L'Express), [https://www.lexpress.fr/actualite/sciences/le-livre-qui-veut-modeliser-l-amour-par-les-mathematiques\\_2075520.html](https://www.lexpress.fr/actualite/sciences/le-livre-qui-veut-modeliser-l-amour-par-les-mathematiques_2075520.html)
- Laurent Pujo-Menjouet : Presse écrite (Le Figaro), <http://www.lefigaro.fr/sciences/le-bonheur-conjugal-c-est-simple-comme-une-equation-differentielle-20190506>
- Laurent Pujo-Menjouet : Presse écrite (Slate), <http://www.slate.fr/story/178140/maths-livre-jeu-amour-hasard-laurent-pujo-menjouet>
- Laurent Pujo-Menjouet : Presse écrite (Le Parisien), <http://www.leparisien.fr/societe/et-si-l-amour-n-etait-pas-le-fruit-du-hasard-10-06-2019-8090055.php>
- Laurent Pujo-Menjouet : Presse écrite (Montreal Gazette), <https://montrealgazette.com/news/local-news/equations-can-predict-the-success-of-relationships-mathematician-says>
- Laurent Pujo-Menjouet : Presse écrite (Society), <http://math.univ-lyon1.fr/~pujo/Society.pdf>
- Laurent Pujo-Menjouet : Presse écrite (Le matin dimanche, Suisse), <https://twitter.com/lpmenjouet/status/1130474006312890373/photo/1>
- Laurent Pujo-Menjouet : Presse écrite (Le journal de Montréal), <https://www.journaldemontreal.com/2019/07/30/et-si-lamour-se-maintenait-avec-des-equations-mathematiques>

#### 7.3.2. Interventions

- Thomas Lepoutre: Visite de l'inria pour les stagiaires de 3e de l'ICJ (plusieurs fois dans l'année, une matinée en général).
- Thomas Lepoutre participation to MathaLyon intervention
- Laurent Pujo-Menjouet participation to “Math en Jeans”, Collège-Lycée Lacassagne, Lyon and Collège Gratte-Ciel, Villeurbanne
- Laurent Pujo-Menjouet participation to “Mathématiques étonnantes, SMF conférence”, Lyon
- Laurent Pujo-Menjouet participation to TEDx, Montrouge [https://www.youtube.com/watch?v=xJ8wE\\_wmtUY](https://www.youtube.com/watch?v=xJ8wE_wmtUY)

## **ERABLE Project-Team**

### **9.3. Popularization**

#### **9.3.1. Interventions**

Carol Moraga Quinteros participated in the contest “DESCRYPThèse” of the doctoral school E2M2 of the University of Lyon 1, winning a prize for one of the best presentations in April 2019. The title of the talk was “BrumiR: un algorithme *de novo* pour prédire les petits ARNs sans génome de référence”.



## **IBIS Project-Team**

### **8.3. Popularization**

#### **8.3.1. Interventions**

Delphine Ropers participated in the colloquium FIGAS 2019 - Un rêve pour les filles et les garçons : la Science (Nov 2019). She was moderator of the session "Stéréotypes dans le numérique", and co-presented with Thierry Vieville "Mais comment éduquer les garçons à l'équité des genres au niveau informatique et numérique ?".

## **MOSAIC Project-Team**

### **8.3. Popularization**

- Olivier Ali:
  - Participated to the Declic initiative: Discussions about of scientific research to high school students (3h, Lycée Jean Perrin, Lyon).
  - Invited conference about mechanical modeling of plant morphogenesis for the Université Ouverte in Lyon.
- Christophe Godin participated to the Declic initiative: Introductory talk and discussions about scientific research to high school students (3h, Lycée Frédéric Fays, Villeurbanne).

#### **8.3.1. Interventions**

- Christophe Godin gave:
  - a lecture at Inria Grenoble in the context of a training program for Informatique et Sciences du Numérique dedicated to Math and Physics highschool teachers. see [video](#) (1h30)
  - a visio-seminar to highschool students of the French Lycée in Laos (1h30)

## NUMED Project-Team

### 6.3. Popularization

Emmanuel Grenier: "Mathematics and vaccines" (Université de Chambéry, for first year students).

#### 6.3.1. Interventions

- H. Leman: Mentoring of two high school students
- D. Coulette: Scientific speed dating at "Musée des Confluences" (Lyon) for the "Fête de la Science" and 80<sup>th</sup> birthday of CNRS.

## STEEP Project-Team

### 9.3. Popularization

#### 9.3.1. Education

- Guillaume Mandil gave a half-day training course to a group of high school teachers (Lycée Mounier - CLEPT), July 2019.
- Peter Sturm gave a lecture on the environmental impact of ICT, during a training week of high school teachers of the Hauts-de-France Region, Lille, France, June 2019.

#### 9.3.2. Conference-debate series and YouTube-channel “Understanding and Acting”

Following a dynamics of exponential growth in a finite world, humanity today faces a number of unprecedented and tightly interlinked challenges. With a growing number of environmental limits being largely and irreversibly exceeded (GHG concentrations in the atmosphere, biodiversity loss, soil erosion, freshwater shortages...), social, economic, geopolitical, humanitarian (etc.) consequences are becoming more urgent than ever to address, while the threat of an uncontrolled global collapse is now more than a prospect. It is urgent to initiate deep, structural, socioeconomic changes on virtually all aspects of our increasingly global societies (economics, industrial and agricultural production, consumption, education, all requiring major new local and global policies).

In view of these facts, the STEEP research team has initiated in 2016 a series of conferences-debates entitled “Understanding & Acting” (*Comprendre et Agir*) that examines these issues in order to help researchers and citizens to increase their awareness of the various issues at stake in order to initiate relevant individual and collective actions. From now on, the scientific community at large must realize that its duty also lies in helping citizens to better understand these issues. If the fraction of people in society whose privilege is to be paid to think about society’s problems do not seize this opportunity in the critical times we face, who will? Researchers must become more involved in the search of socioeconomic alternatives and help citizens to implement them. The interactions between researchers and citizens must also to be reinvented.

The presentations of this series of conferences typically last between 30 to 45 minutes; they are followed by a 45 minute public debate with the audience. The presentations are captured on video and then made directly accessible on the YouTube Channel “Comprendre et Agir”. At the end of 2019 the YouTube channel has about 5,400 subscribers and reached a total of about 425,000 viewings.

The conference-debates of 2019:

- Olivier Vidal, Université Grenoble Alpes: Resources and energy at the global scale in the context of the energy transition (*Matières premières et énergie à l’échelle mondiale dans le contexte de la transition énergétique*)
- Grégoire Chambaz, Lausanne: How real is the risk of a blackout? (*Le risque de blackout est-il réel ?*)
- Christophe Bonneuil, CNRS and École des hautes études en sciences sociales: When the whites intended to preserve the planet – A history of geo-power, 1865-1914 (*Quand les blancs voulurent conserver la planète. Une histoire du géopouvoir, 1865-1914*)
- Peter Sturm, STEEP: Environmental challenges and what is blocking acting on them (*Enjeux environnementaux et blocages à l’action*)
- Sophie Wahnich, CNRS and Institut interdisciplinaire d’anthropologie du contemporain: Why was King Louis XVI destituted in 1792? Social imaginaries from 1770 to 1792 (*Pourquoi le roi Louis XVI a-t-il été destitué en 1792 ? Imaginaires sociaux de 1770 à 1792*)
- Denis Dupré, STEEP: Collapses and finance (part I) – Is Finance a collapse pyromaniac? (*Effondrements et finance (partie I) – La Finance : pyromane des effondrements ?*)

Link to the web page of the series (program, abstracts, dates, complements etc.): <https://team.inria.fr/steep/les-conferences-debats-comprendre-et-agir/>

Link to the YouTube channel: [https://www.youtube.com/channel/UCJbcXCcOA63M8VMysAbmt\\_A](https://www.youtube.com/channel/UCJbcXCcOA63M8VMysAbmt_A)

### 9.3.3. Interventions

Guillaume Mandil participated in the preparation of an exposition at Cité des Sciences (Paris).

Team members gave the following general audience talks:

- Serge Fenet: Talk *Design et anthropocène : business as unusual – Une cartographie des risques par le prisme de la systémique* at the *Biennale Internationale du Design*, St-Étienne, France, May 2019.
- Serge Fenet: *Effondrements et anthropocène à la lumière de la dynamique des systèmes* at ESC Clermont-Ferrand, France, May 2019.
- Serge Fenet: *Technologies numériques et catastrophe environnementale : des liens complexes* at École Centrale de Lyon, for a general audience of master students.
- Pierre-Yves Longaretti: Seminar *Voluntary minimal consumption: stakes, obstacles, levers*. EcoInfo thematic school, November 2019.
- Pierre-Yves Longaretti: Seminar *Climate Change and strategic surprise*, Swiss military history and prospective center, December 2019.
- Pierre-Yves Longaretti: Round table discussion, *Will we all be farmers tomorrow? (Demain, tous paysans ?)*, Transition Towns biennial meeting, Grenoble, March 2019.
- Pierre-Yves Longaretti: Round table discussion, *Agriculture: global and local stakes (Agriculture : enjeux locaux et globaux)*, Forum citoyen alimentation & santé : La transition agro-alimentaire dans nos assiettes, Grenoble, November 2019.
- Emmanuel Prados: Institutional Conference *Veille techno à Polytech*, Grenoble, France, December 9-16, 2019. Organized by the MSTII Graduate School of Université Grenoble Alpes (Bernard Tourancheau).
- Emmanuel Prados: Institutional Conference organized by UniLaSalle (Hervé Leyrit), Beauvais, France, October 17, 2019.
- Emmanuel Prados: Conference at the back-to-school day of EPITA LYON (computer intelligence engineering school), Lyon, France, September 10, 2019. Organizer: Epita (Lamia Derrode).
- Emmanuel Prados: Conference on environmental transition for elected politicians of the Grésivaudan community of communes, open to the general public, Le Versoud, France, June 3rd, 2019. Organizer: Le Versoud City Hall (Claire Desmaris).
- Emmanuel Prados: General public conference, Crolles, France, June 22, 2019. Organizer: Association *Ecocitoyens*.
- Emmanuel Prados: Conference at the *CitizenCampus* entitled *Transition, démocratie, effondrement : la quadrature du cercle ?*, Grenoble, France, March 29, 2019. Organizer: Université Grenoble Alpes. <https://twitter.com/YannToma/status/1112094922499330049>
- Emmanuel Prados: Conference/debate *Quelles transitions dans un contexte d'effondrement ?*, Palais des Sports de Grenoble, France, March 13, 2019. Organizer: Ville de Grenoble. <http://villesentransition.grenoble.fr/events/quelles-transitions-dans-un-contexte-deffondrement/>
- Emmanuel Prados: Conference within the ISN cycle, *Le numérique face aux enjeux environnementaux et sociétaux*, Grenoble, France, April 10, 2019. Organizer: Inria. [https://www.canal-u.tv/video/inria/le\\_numerique\\_face\\_aux\\_enjeux\\_environnementaux\\_et\\_societaux.50079](https://www.canal-u.tv/video/inria/le_numerique_face_aux_enjeux_environnementaux_et_societaux.50079)
- Emmanuel Prados: Invited conference at the Loria colloquium, *Le numérique face à la catastrophe environnementale et sociétale*, Nancy, France, February 8, 2019. Organizer: Loria (<http://www.loria.fr/>). <https://www.loria.fr/fr/communication/colloquium-loria-exposes-et-videos/>

- Peter Sturm made a “Tour de France” by bicycle, to raise awareness on environmental issues. During this trip (May 15 to July 4), he visited all Inria centers and gave a talk on *Environmental challenges and what is blocking acting on them* in ten locations (Sophia Antipolis, Montpellier, Bordeaux, Rennes, Saclay, Rocquencourt, Paris, Nancy, Lyon, Grenoble). His visits were accompanied by various events, including seminars by local researchers, meetings with sustainable development commissions, social gatherings, etc. This initiative is described at <https://project.inria.fr/inriavelo/fr/>, see also the daily blog <https://www.polarsteps.com/PeterSturm3/1692663-inri-a-velo>.

## AGORA Project-Team

### 10.3. Popularization

- Hervé Rivano, Atelier de recherche participative sur la mesure de la qualité de l'air, Ecole Urbaine de Lyon, France.
- Hervé Rivano, Développement et expérimentation du kit pédagogique *Ca va chauffer*, Ecole Jules Guesde, Villeurbanne, France.
- Hervé Rivano, Atelier autour du kit pédagogique *Ca va chauffer*, Super Demain, Métropole de Lyon.

#### 10.3.1. Articles and contents

- Hervé Rivano is co-author of the blog post *Représenter l'intangible : les défis de la visualisation des données numériques environnementales. Montrer la pollution de l'air, le cas d'Air To Go*<https://medium.com/anthropocene2050/>
- Hervé Rivano is organizer and moderator of the podcast *Quelle ville intelligente est possible ?*, <https://www.sondekla.com/user/event/10011>
- Hervé Rivano is moderator of the podcast *Anthropocène et outils numériques*, <https://www.sondekla.com/user/event/9805>

#### 10.3.2. Interventions

- Walid Bechkit was invited speaker about *3M'Air Mesures citoyennes Mobiles et Modélisation: qualité de l'air et îlots de chaleur à Lyon*, Colloque National Capteurs et Sciences Participatives, Paris, 2019.
- Oana Iova, Hervé Rivano and Fabrice Valois was involved in *Les rêveries lumineuses de Léonard*, <https://popsciences.universite-lyon.fr/agenda/les-reveries-lumineuses-de-leonard-fete-des-lumieres-2019/>, contribution de l'Ecole Urbaine de Lyon pour l'Université de Lyon, Fête des Lumières, 2019.

## **AVALON Project-Team**

### **9.3. Popularization**

Yves Caniou est co-fondateur et co-organisateur du Campus du Libre, un événement autour du Libre dont l'objectif est de partager différents aspects du libre et des communs, allant par exemple du logiciel libre (Linux, Firefox, *etc.*) aux espaces communs gérés collaborativement (Wikipedia, OpenStreetMap).

La 2e édition s'est déroulée la journée du samedi 23 novembre 2019.

#### **9.3.1. Articles and contents**

- Interviews in order to popularize
  - Laurent Lefèvre was interviewed for the following dissemination media:
    - \* "En 2025, le numérique pourrait polluer autant que l'automobile", Le guide MAG2lyon du Développement Durable, December 2019
    - \* Radio show "Le numérique et ses impacts", Radio Fréquence Paris Plurielle, December 20, 2019
    - \* "L'insoutenable croissance du numérique", Alternatives Economiques, December 19, 2019
    - \* "Le streaming en expansion, son empreinte écologique aussi", Agence France Presse Dossier, October 28, 2019 - Reprint in Le Soleil, La Presse and le Quotidien (Canada, 28/10/2019), L'écho (France, 28/10/2019), Sciences et Avenir (France, 28/10/2019), L'OBS (France, 28/10/2019), Ouest France (France, 28/10/2019), Le Progrès (France 18/11/2019), DerStandard (Germany, 1/11/2019, "Gratis und ohne Anmeldung: Videostreaming-Dienst Apple TV+ gestartet"), Tierwelt (Germany, 3/11/2019, "STREAMING UND CO2 - Serienjunkies als Klimasunder")
    - \* "Mail, streaming, cloud... 20 gestes pour réduire sa pollution numérique", Business Insider France, October 29, 2019
    - \* Radio show "Le téléphone sonne", France Inter, August 16, 2019
    - \* "Guide Consommation Responsable - 3 gestes pour adopter une consommation numérique responsable", Institut National de la Consommation (INC), May 29, 2019
    - \* "Stocker trop de photos et de mails crée aussi de la pollution", Journal de Saone et Loire, after the Festival sans Decoder of Dompierre les Ormes, May 21, 2019
    - \* "Pollution numérique : comment réduire ses effets au quotidien ?", TV5 Monde, January 18, 2019

#### **9.3.2. Education**

- Yves Caniou is responsible of the LPI Certification at Université Claude Bernard Lyon 1. Further discussions are in progress concerning the proposed tools and redaction of courses/questions.
- Olivier Glück was in charge of one course in DIU Enseigner l'Informatique au Lycée, 50h, Formation continue, Université Lyon 1, France.

#### **9.3.3. Panels**

- Laurent Lefèvre was invited in the following panels in 2019 :
  - The "Empreinte écologique du numérique - Ecological footprint of digital world", Festival sans Decoder, Dompierre les Ormes, May 19, 2019
  - The "Energie numérique: ennemie ou alliée de l'écologie", Ateliers Sciences et Citoyens, Les rencontres du CNRS, Poitiers, April 2, 2019



## **CTRL-A Project-Team**

### **10.3. Popularization**

#### ***10.3.1. Interventions***

- National events:

During the 2019 edition of Fête de la Science, Raphaël Bleuse co-hosted with Clément Mommessin (DataMove team) six one-hour popularization sessions. These sessions introduce the concept of infinity, and detail key milestones towards its construction in the modern mathematics for high-school students.

## DANTE Project-Team

### 10.3. Popularization

#### 10.3.1. Internal or external Inria responsibilities

Isabelle Guérin Lassous has been the managing director of the Foundation Blaise Pascal until the end of June 2019. The objectives of the foundation are to promote mathematics and computer science and to attract young people to scientific fields like computer science and mathematics. The actions of the FBP focus on:

- a support to actors that promote mathematics and computer science via allocated funding based on call of proposals;
- a structuring of actors to increase the impacts of their actions, to coordinate the efforts and to share experiences;
- a development of innovative experiences via summer camps and clubs of mathematics and computer science.

#### 10.3.2. Interventions

Isabelle Guérin Lassous participated to the project Science XX Elles organized by the association Femmes & Sciences, CNRS and Ecole Normale Supérieure de Lyon. A portrait has been realized and has been exhibited in front of the Musée des Confluences during La Fête de la Science in October 2019 (<http://www.femmesetsciences.fr/lascience-taillexelles/lyon/isabelle-guerin-lassous/>). She also participated to a speed meeting with families visiting the Musée des Confluences during which she has promoting her research activity.

Isabelle Guérin Lassous spent one day in high school (lycée St Just in Lyon) to promote computer science and to present female computer scientists in front of terminal classes.

Isabelle Guérin Lassous participated to the Challenge Innovatech organized by the association Elles Bougent. She was a member of the selection committee who selected a scientific project designed by a group of young girls (in high school).

## **DATAMOVE Project-Team**

### **10.3. Popularization**

#### ***10.3.1. Internal or external Inria responsibilities***

- Commission des emplois scientifiques du centre GRA

#### ***10.3.2. Interventions***

- Fête de la Science, Grenoble
- CS unplugged for schoolchildren, Inria RA

**MARACAS Team (section vide)**

## POLARIS Project-Team

### 10.3. Popularization

Patrick Loiseau wrote with Oana Goga an article “Publicité en Ligne : reprenons la main !”, that was co-published co-published by the blog Binaire (Le Monde) and The Conversation France, June 3, 2019.

#### 10.3.1. Internal or external Inria responsibilities

- B. Gaujal is a member of the CR2 hiring committee in Grenoble.
- J.-M. Vincent is in charge of the relation Rectorat / Inria-Grenoble for the organization of scientific events (Festival of Science, Schools Visits, organization of Conference Cycles on research in CS and Applied Mathematics for teachers in Colleges)
- J.-M. Vincent is
  - Member of the national coordination of the Diplôme Inter-Universitaire “Enseigner l’Informatique au Lycée” (50 universities involved).
  - Local Head of DIU EIL in Academy of Grenoble
  - Member of the organization of the teaching sessions for all the teachers in CS coming from abroad
  - Member of the national Commission Inter-Irem in Informatics
  - Member of the first national jury for the competitive recruitment of teachers in computer science (Capes NSI 2019-20)

#### 10.3.2. Articles and contents

Arnaud Legrand participated in the writing of a book [39] on Reproducible Research, which aims at helping students and engineers and researchers to find efficient and accessible ways leading them to improve their reproducible research practices.

#### 10.3.3. Education

- V. Danjean is the head of the DU ISN formation (Diplôme Universitaire Informatique et Sciences du Numérique)
- V. Danjean co-organized the new DIU EIL formation (Diplôme Inter-Universitaire Enseigner l’Informatique au Lycée). He is involved both at the national level (for the coordination and the definition of the content of this formation provided in more than 30 universities in France), and at the local level (coordination of the local teams, courses scheduling, conference organization, ...)

#### 10.3.4. Interventions

- V. Danjean participated in “La Fête de la Science”, animating several sessions of “unplugged computer science”
- P. Loiseau co-organized and animated a workshop “IA, éthique et société”, Forum Ecobiz Grenoble, October 2019.
- P. Loiseau participated in a debate “Ethique et numérique : quels enjeux sociétaux ?”. Festival Transfo, Grenoble, France, January 2019.

**ROMA Project-Team (section vide)**

## **SOCRATE Project-Team**

### **8.3. Popularization**

#### **8.3.1. Education**

Florent de Dinechin gave a lecture in Grenoble for high-school teachers, in the framework of the ISN convention between Académie de Grenoble and Inria.

## CHROMA Project-Team

### 10.3. Popularization

A. Spalanzani made a cross interview on women in robotics (<https://www.inria.fr/centre/nancy/actualites/une-carriere-en-robotique-regards-croises-sur-des-parcours-d-exception>)

#### 10.3.1. Articles and contents

O. Simonin gave an interview to Le Monde Informatique - IT Tour à Lyon "*La voiture autonome : mythe ou réalité ?*" (<https://www.lemondeinformatique.fr/actualites/lire-interview-video-olivier-simonin-professeur-inria-insa-lyonetgrenoble-77605.html>) (26/09/19)

#### 10.3.2. Education

A. Spalanzani made a seminar on "social autonomous vehicle navigation" in the scope of "cycle de conférences ISN".



**IMAGINE Project-Team (section vide)**

## MAVERICK Project-Team

### 8.3. Popularization

#### 8.3.1. Articles and contents

- Fabrice Neyret maintains the blog [shadertoy-Unofficial](#) and various shaders examples on [Shadertoy site](#) to popularize GPU technologies as well as disseminates academic models within computer graphics, computer science, applied math and physics fields. About 26k pages viewed and 12k unique visitors (87% out of France) in 2019.
- in 2019, Fabrice Neyret launched the blog [desmosGraph-Unofficial](#) to popularize the use of interactive grapher [DesmosGraph](#) for research, communication and pedagogy. For this year, about 1k pages viewed and 800 unique visitors (95% out of France).

#### 8.3.2. Interventions

In the scope of [MathC2+](#) (partnership with French ministry of Education and "Fondation Sciences mathématiques de Paris") Inria Rhône-Alpes hosted in June, 2019 a selection of about 30 motivated high-school students (level "second") for a day of presentations, demos and discussions. Fabrice Neyret did a 1h presentation on "Math and Physics in special effects and video games" plus discussions about his curriculum and questions.

## MOEX Project-Team

### 8.3. Popularization

#### 8.3.1. Interventions

- Présentation “L’intelligence artificielle en perspective”, Université Inter-Âges du Dauphiné (UIAD), Grenoble (FR), 2019-03-06 (Jérôme Euzenat)
- Introduction of the *Class?* game to a fourth graders (CM1-CM2) class, Montbonnot (FR), 2019-06-25 (Line van den Berg and Jérôme Euzenat)
- Introduction of the *Class?* game to a tenth graders (2<sup>nd</sup> MathC2+) group, Montbonnot (FR), 2019-06-25 (Line van den Berg and Jérôme Euzenat)
- Introduction of the *Class?* game to seventh and eighth graders (5<sup>e</sup> et 4<sup>e</sup>) classes within the Fête de la science (Science fair), Montbonnot (FR), 2019-10-10 (Line van den Berg and Jérôme Euzenat)
- Introduction of the *Class?* game to general public within the Fête de la science (Science fair), Montbonnot (FR), 2019-10-12 (Line van den Berg and Jérôme Euzenat)
- Presentation of the *Class?* game to the meeting of the Société Francophone de Classification, Nancy (FR), 2019-09-03–04 (Jérôme Euzenat)

#### 8.3.2. Creation of media or tools for science outreach

*Class?* We are developing mediation material for explaining to the general public what knowledge representation is and how it may evolve. Its main goal is to show children that the same individuals may be classified in different and evolving ways and that it is possible to communicate such classifications without expressing them. For that purpose, we have designed a card game called *Class?*<sup>0</sup> which allows players to guess the hidden ontology of another player. It has been presented to school classes from year 5 of primary school (fourth graders) to year 11 (tenth graders), albeit shows features of interest for a wider audience.

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<sup>0</sup><https://moex.inria.fr/mediation/class/>

## **MORPHEO Project-Team**

### **10.3. Popularization**

#### ***10.3.1. Articles and contents***

- Edmond Boyer was interviewed by the journal *Vivre à Grenoble* en février 2019. An article mentioning his work with the Kinovis platform was published in april 2019.

**PERCEPTION Project-Team (section vide)**

**PERVASIVE Project-Team (section vide)**

**THOTH Project-Team (section vide)**

**TYREX Project-Team (section vide)**