

Inria

RESEARCH CENTER

FIELD

Algorithmics, Programming, Software and Architecture

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.

AROMATH Project-Team

8.3. Popularization

8.3.1. Interventions

Ioannis Emiris was an invited speaker at “From Open Access to Science”, Athens, May 2019. and “30 years celebration of ATHENA Research Center”, Athens, November 2019.

CARAMBA Project-Team

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Pierrick Gaudry was member of a jury for the Innoviris LAUNCH program, whose goal is to fund start-ups created on the basis of academic work.

10.3.2. Articles and contents

- Cécile Pierrot wrote a blog post for [Le Monde Binaire](#).

10.3.3. Interventions

- Cécile Pierrot gave a talk about women in science at a meeting *Les Filles, osez les sciences !* in Reims, March 2019.
- Cécile Pierrot and Paul Zimmermann took part in La Fête de la Science, Nancy and Bouxurulles, October 2019.
- Cécile Pierrot gave a talk at La Cité des Sciences, Paris, to open the exhibition called *Espions*, November 2019.
- Pierre-Jean Spaenlehauer gave an introductory talk on polynomial systems to visiting students of the ÉNS Paris-Saclay.

CASCADE Project-Team (section vide)

DATASHAPE Project-Team

8.3. Popularization

8.3.1. Interventions

- Frédéric Chazal, Un exemple de dispositif dédié aux études cliniques. Seminar on AI, Haute Autorité de Santé, September 2019.

GAMBLE Project-Team

10.3. Popularization

10.3.1. Education

G. Moroz is member of the Mathematics Olympiades committee of the Nancy-Metz academy.

10.3.2. Interventions

L. Dupont participated in several events of popularization of computer science:

Day #4 FAN Project, April 23th, Inria project, adult audience.

ISN day, March 7th, adult continuing education of computer science for high-school teachers.

Atelier Google, April 13th, popularization of computer science, general audience.

Atelier Google, December 7th, popularization of computer science, general audience.

GRACE Project-Team

9.3. Popularization

9.3.1. Interventions...

- D. Augot was invited to the mathematical colloquium of the University of Besançon.
- Colloque “Blockchains et compétences” à l’Assemblée nationale le 14 mars: D. Augot, who participated to three meetings at Ministry of Finance and Ministry of Industry about blockchains.
- A. Couvreur is *Correspondant de Médiation Scientifique* of Inria Saclay’s research centre.
- A. Couvreur organised the *Fête de la science 2019* at Inria Saclay on october 10 and 11 2019. J. Nardi, S. Bordage, M. Chenu de la Morinerie, M. Romeas participated to the event as volunteers.
- A. Couvreur organised the Rendez-vous des Jeunes Mathématiciennes et Informaticiennes (RJMI) at Inria Saclay on october 21 and 22, 2019.

LFANT Project-Team

8.3. Popularization

8.3.1. Education

Alkindi : R. Barbulescu is one of the three organizers of the Alkindi contest, a contest for 13-to-15 year old students which gathers more than 60000 participants from France and Switzerland. D. Robert and the other members invite the winners of the Bordeaux region for a 2 hour visit each year.

8.3.2. Interventions

- from 27/05/2019 to 31/05/2019, X. Caruso supervised a stage at the fablab Coh@bit (at IUT Gradignan) to build some educational material
- 30/06/2019, X. Caruso: *Ramène pas ta science* on a physical experiment demonstrating that the fastest path between two points is an arc of cycloid
- 8-10/10/2019, A. Page: *Fête de la Science* at Inria Bordeaux, activity on cryptography (8 groups of students).
- 17/10/2019, X. Caruso and A. Page: *Village des 80 ans du CNRS*, discussion stand "Quizz des idées reçues" on research in mathematics.
- 19/10/2019, X. Caruso and M.-L. Chabanol: *Village des 80 ans du CNRS* on physical experiment demonstrating that the fastest path between two points is an arc of cycloid
- from 07/04/2019 to 14/04/2019, R. Barbulescu was one of two teachers for a math camp in Kinshasa of 150 students <https://www.cnrs.fr/insmi/spip.php?article3190>.
- from 06/07/2019 to 13/07/2019, R. Barbulescu was the main organiser for a math training camp which gathered the national teams for the International Olympiad of Mathematics of France, Romania and Bulgaria.
- 5/12/2019, D. Robert: small presentations of cryptography for the student of Ecole Normale Supérieure de Lyon.

OURAGAN Project-Team

10.3. Popularization

- Alban Quadrat co-edited the book *Le Jeu de rôle sur table : un laboratoire de l'imaginaire*, Carrefour des lettres modernes, n. 7, Classiques Garnier, 2019.
- Fabrice Rouillier is a member of the editorial board of *Interstices*
- Fabrice Rouillier is *chargé de mission médiation* at Inria Paris
- Fabrice Rouillier is a member of the *comité de pilotage de l'année des mathématiques*
- Fabrice Rouillier is a member of the *comité de pilotage de la semaine des mathématiques*
- Fabrice Rouillier is the president of the association *Animath*⁰
- Fabrice Rouillier is member of the scientific board of the SMF ⁰conference *Mathématiques étonnantes*⁰

10.3.1. Internal or external Inria responsibilities

- Alban Quadrat is a member of the technical committee *Linear Systems* of the *International Federation of Automatic Control* (IFAC)
- Elias Tsigaridas is a member of the Evaluation committee (Commission d'Évaluation) of Inria.

10.3.2. Interventions

- Fabrice Rouillier participated to the *semaine des mathématiques* for the Paris Inria Paris research center
- Fabrice Rouillier participated to the welcoming of schoolchildren for their *semaine d'observation* at Inria Paris research center.

⁰<http://www.animath.fr>

⁰Société Mathématique de France

⁰<https://smf.emath.fr/actualites-smf/mathematiques-etonnantes-programme>

POLSYS Project-Team (section vide)

SECRET Project-Team

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

- **Association Animath:** M. Lequesne serves on the board of Animath.
- M. Lequesne is also member of the scientific committee of the French Tournament of Young Mathematicians: redaction of the problems for the competition, jury member (chair of a jury) ; member of the scientific committee of the International Tournament of Young Mathematicians: redaction of the problems for the competition, jury member (chair of a jury) ; Member of the scientific committee of the Correspondances des Jeunes Mathématicien.ne.s: redaction of the problems for the competition.

9.3.2. Articles and contents

- *La fragilité inattendue du chiffrement symétrique dans le monde post-quantique*, Gaëtan Leurent and Maria Naya-Plasencia, María, Interstices [63]

9.3.3. Education

- **Alkindi cipher challenge:** Several members of the project-team are involved in the cipher challenge for high-school students "concours Alkindi" <http://www.concours-alkindi.fr/>. Mathieu Lequesne serves as a co-organizer of the challenge, preparing the three rounds and the final. Together with C. Boura, he was also involved in the redaction of the exercises.
- Organization of the event "Rendez-vous des Jeunes Mathématiciennes et Informaticiennes" at Inria Paris (October 28-29) by M. Lequesne, a 2-day camp for 20 high-school girls interested in mathematics and computer science. C. Boura, A. Canteaut and L. Perrin gave talks at this event.
- **Project Algo'scape with a high school (Lycée Anna Judic, Semur en Auxois):** design of an escape game on cryptography (L. Perrin), visit of 15 students at Inria, May 2019 (A. Canteaut and L. Perrin).

SPECFUN Project-Team

8.3. Popularization

8.3.1. Articles and contents

- Georges Gonthier published an interview article *Blockchain: ce que c'est, comment ça marche* in *La Recherche*, **545**, March 2019.
- Georges Gonthier co-wrote with Ivan Odonnat (Banque de France) *L'avenir du bitcoin et de la blockchain*, in *Les Carnets de l'Institut Diderot* (2019).

CAIRN Project-Team

8.3. Popularization

8.3.1. Articles and contents

O. Sentieys contributed to the Inria white book on scientific reviews and challenges in cybersecurity https://files.inria.fr/dircom/extranet/LB_cybersecurity_WEB.pdf.

8.3.2. Interventions

Members of the team participated in the national science festival (*Fête de la Science*) in Lannion, October, with demonstrations on wireless sensor networks, body sensor network, cryptology and digital circuit design.

CAMUS Project-Team

10.3. Popularization

- A. Charguéraud is a co-organizer of the *Concours Castor informatique*. The purpose of the Concours Castor is to introduce pupils (from *CM1* to *Terminale*) to computer sciences. More than 700,000 teenagers played with the interactive exercises in November 2019. More information on: <http://castor-informatique.fr/>.

10.3.1. Articles and contents

- Jens Gustedt authored the book *Modern C* [24], which since the first publication of an online draft in 2016 has become one of the major references for the C programming language.
- Jens Gustedt is blogging about efficient programming, in particular about the [C programming language](#). He also is an active member of the [stackoverflow community](#), a technical Q&A site for programming and related subjects.

10.3.2. Education

- Cédric Bastoul participated in the training of high school teachers involved in the forthcoming optional Computer Science course for high school students. Specifically, he produced lectures and materials to teach Computer Architecture to high school students.

10.3.3. Interventions

- Vincent Loechner has been organizing a hub for the Google Hashcode programming contest (online qualification round) at Université de Strasbourg in Feb. 2019. More than 30 students and colleagues were hosted in the university classrooms to participate to this event.
- Cédric Bastoul delivered a presentation on program optimization at "Journée des licences" ("Bachelor Day") in June 2019.

10.3.4. Internal action

- Bérenger Bramas, Jens Gustedt and other members of the scientific computing group (*axe transverse calcul scientifique*) organized two software corners at the ICube laboratory. A software corner is a meeting where researchers exchange about programming best practices, existing and upcoming tools, and their own experiences.

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.

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.

PACAP Project-Team

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

Caroline Collange is a member of the committee of the Gilles Kahn PhD prize of Société Informatique de France.

10.3.2. Articles and contents

- Erven Rohou gave an interview in the *Émergences* magazine on (volume 56, Mar 22nd 2019) on automatically masking sensitive information to protect against side-channel attacks.

10.3.3. Education

Nicolas Bellec and Isabelle Puaut taught *Basics of computer architecture*, a training of high school teachers as part of the opening of the new computer science option in the two final years before Baccalauréat, 10 hours.

Erven Rohou was invited to present the life of a researcher in computer science to middle school students (*Collège de Cesson-Sévigné*)

10.3.4. Interventions

Erven Rohou was present at the International Cybersecurity Forum in Lille (FIC <https://www.forum-fic.com/en/home.htm>). He presented a demo on compiler-generated countermeasures against side-channel attacks, developed within the context of the CHIST-ERA SECODE project.

10.3.5. Internal action

Erven Rohou presented the activities of PACAP at the SecDays event organized at Inria Rennes and IRISA.

HYCOMES Project-Team

9.3. Popularization

9.3.1. Internal action

The Hycomes team has hosted short internships for secondary school students. This has been an opportunity to promote women in computing, since three female students visited the team for four days, to discover what scientific research is, and what research in computer science could mean. All team members contributed to the initiative.

Kairos Project-Team

10.3. Popularization

10.3.1. Interventions

Luigi Liquori. Table ronde: “Journée Internationale du m-Tourisme 2019. Blockchain for Tourism”, M-Tourism Day, Telecom Valley, Panel, Cannes, 2019.

KOPERNIC Team

9.3. Popularization

9.3.1. Articles and contents

- Interview with the Statinf co-founders, published on Inria web site (<https://www.inria.fr/centre/paris/actualites/statinf-sonde-les-caeurs-des-systemes-embarques>)

9.3.2. Education

- Presentation of Adriana Gogonel at a day organized by a Creteil and Versailles Academy for outreaching Computer Science (April 2019, Paris)

9.3.3. Interventions

- Participation of Adriana Gogonel at a round table entitled "May we innovate within a research institute?" (March 2019, Rocquencourt).

PARKAS Project-Team

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

- T. Bourke participated in the *commission d'emplois scientifiques* (postdocs, delegations, and PhDs) for the Inria Paris research centre.
- T. Bourke participated in the PhD progress committees (*suivi doctorale*) for B. Medeiros de Barros and N. Kulatova.
- T. Bourke and M. Pouzet participated in meetings with the *Ministère de la Transition écologique et solidaire* on the validation of autonomous driving systems.

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.

TEA Project-Team (section vide)

ANTIQUE Project-Team

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

- Cezara Drăgoi and Xavier Rival are elected members of the Inria Commission of Evaluation
- Jérôme Feret is a member of the jury of the SIF - Gilles Kahn PhD Award.
- Xavier Rival is member of the “Bureau du comité des projets” since October 2018.
- Xavier Rival is Chair of the Hiring Committee for Inria researchers at the center of Paris (CRCN) for 2019.
- Cezara Drăgoi served in the jury for part-time positions at LiX, January 2019.
- Cezara Drăgoi served in the Inria jury for CES - delegations and Phd scholarships in 2019.

10.3.2. Articles and contents

- Xavier Rival has been working with Kwangkeun Yi on the writing of a book that should serve as an introduction to the field of static analysis, for students and engineers, and this book is expected to be released by MIT Press in January 2020 [16].

10.3.3. Creation of media or tools for science outreach

Xavier Rival has given a talk as part of the “Mon équipe en 180 secondes” series at Inria Paris.

CAMBIUM Project-Team

9.3. Popularization

9.3.1. Interventions

Xavier Leroy was on the committee of the 2019 Sephora Berrebi scholarship for women in mathematics and computer science. At the award ceremony (Paris, France, February 2019), he gave a popular science talk on Grace Hopper and the birth of the compiler.

Xavier Leroy gave popularization talks on deductive software verification at the Aerospace Lab Conferences of ONERA (Palaiseau, France, June 2019) and at the Summer 2019 BOB conference (Berlin, Germany, August 2019).

CELTIQUE Project-Team

6.3. Popularization

6.3.1. Interventions

- Thomas Genet gave a talk “Bug, Virus, Intrusion, Pirates... So many threats and no defense? Yes... maths.” in high schools close to Rennes. 2019.

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.

DEDUCTEAM Project-Team

9.3. Popularization

9.3.1. Articles and contents

Articles

- The synthesis article Algorithmes et modèles : l'histoire d'une convergence, written a decade ago has been published in Pierre Mounoud, Leçons de mathématiques d'aujourd'hui : Volume 5 (Cassini,2019).

Books

- Gilles Dowek, Ce dont on ne peut parler, il faut l'écrire : Langues et langages (Le Pommier, 2019)

Manuscripts

- Gilles Dowek, How the physical Church-Turing thesis changed the concept of machine, manuscript, 2019.
- Gilles Dowek, Two consequences of the hypothesis that we are within the world, manuscript, 2019.
- Gilles Dowek, Instinct, language, and artificial intelligence, manuscript, 2019.

9.3.2. Interventions

Gilles Dowek has been invited to the PROGRAMme workshop "Machines" where he has presented a paper How the physical Church-Turing thesis changed the concept of machine.

Gilles Dowek has been invited to the Conference on Robotics, AI, and Humanity, Science, Ethics, and Policy organized by the Pontifical Academy of Sciences and the Pontifical Academy of Social Sciences where he has presented a paper Instinct, language, and artificial intelligence.

Gilles Dowek has been invited at the meeting Le hasard, le calcul et la vie, in Cerisy, where he has given a talk Un Chaos discret.

Gilles Dowek has been invited to the meeting Experiencing reality directly in Jerusalem where he has presented a paper Two consequences of the hypothesis that we are within the world.

GALLINETTE Project-Team

8.3. Popularization

8.3.1. Education

- Hervé Grall has contributed to the project **Merite**, which aims to promote science learning in middle and high schools. He is the main contributor to the theme "Communication between machines". The project is coordinated by IMT-Atlantique in partnership with 7 other french higher education institutions, the rectorates of the Nantes and Rennes academies, and financed by the "Investments in the Future" and the fund FEDER Pays-de-la-Loire.
- A. Mahboubi has worked with composer Alessandro Bossetti and students of the professional high-school Lycée Michelet, on a project "Art and Mathematics", supported by the **Athenor** theater.

8.3.2. Interventions

- P.-M. Pédrot was invited to give a talk about his scientific activities in Le Pleyne, during the "Semaine Sport-Études" of the first year students in computer science from the ENS Lyon.
- P.-M. Pédrot gave a similar talk about his scientific activities at the LS2N, during the visit of first year students in computer science from the ENS Cachan.

8.3.3. Internal action

- A. Mahboubi participates to the Irisa/Inria mentoring program.

MEXICO Project-Team

9.3. Popularization

9.3.1. Internal or external Inria responsibilities

- STEFAN HAAR has been the president of COST-GTRI.

MOCQUA Team

9.3. Popularization

9.3.1. Articles and contents

- The scientific magazine *La Recherche* re-published an article by Nazim Fatès and Irène Marcovici, with the title “Les automates cellulaires jouent le jeu”, in a Special issue devoted to the theme "Les maths et le réel" (September 2019) [34]. The original article "Automates cellulaires : la complexité dans les règles de l'art" (2018), was modified with minor changes for this special issue.
- Interviews of Simon Perdrix about the Google's result on quantum advantage. La tribune (online article) ; Sciences et Avenir (November 2019 - paper journal and online articles), We demain (online article).

9.3.2. Education

Nazim Fatès participated to a workshop destined to the high-school teachers which were training on the « Information et sciences du numérique » module.

In the lycée Saint-Exupéry de Saint-Dizier: he gave three one-hour conferences destined to students, related to the film *Imitation game* on Alan Turing (March 18).

9.3.3. Interventions

Nazim Fatès was invited to give various talks on the question of artificial intelligence:

- With the European parliamentary association (APE), he was invited to talk to European MP's on the theme « Is Europe ready for artificial intelligence? » (Strasbourg, February 13).
- In the « Sciences et société » cycle of IUT Charlemagne (September 26).
- With the association « Jardin des sciences », cycle « intelligences » destined to a wide public, University of Strasbourg (October 10).
- With the association **Femmes responsables** (November 20).

PARSIFAL Project-Team

10.3. Popularization

10.3.1. Interventions

G. Scherer and M. Manighetti participated the “Fête de la Science” exhibit at Inria Saclay on the whole day of October 11th, 2019.

G. Scherer presented the research domain of certified programming to an audience of computer security professionals at the “Pass the Salt” conference in Lille, on Wednesday July 3rd.

PL.R2 Project-Team (section vide)

STAMP Project-Team

8.3. Popularization

8.3.1. Internal action

- Yves Bertot gave a talk on Coq in the *Café-In* series of seminars for all publics of Inria personnel.
- Yves Bertot gave a general presentation on Coq in the *Doctoral seminar* of Inria Sophia Antipolis Méditerranée.

SUMO Project-Team

10.3. Popularization

10.3.1. Education

Nicolas Markey is involved in the organization of action "J'Peux Pas, J' Ai Informatique", whose aim is to break down stereotypes about computer science for 12-year-old pupils.

TOCCATA Project-Team

10.3. Popularization

10.3.1. Internal or external Inria responsibilities

S. Boldo has been the scientific head for Saclay for the MECSI group for networking about computer science popularization inside Inria until October 2019.

She was also responsible (with A. Couvreur of the Grace team and M. Quet of the SCM) for the 2019 “Fête de la science” on October 10th and 11th 2019. Teenagers were welcomed on 8 activities ranging from unplugged activities with Duplo construction toys to programming, and from applied mathematics to theoretical computer science.

10.3.2. Education

S. Conchon and J.-C. Filiâtre, together with K. Nguyen and T. Balabonski (members of the LRI team but not members of Toccata), wrote a book “Numérique et Sciences Informatiques, 30 leçons avec exercices corrigés” (Ellipses, August 2019) [36] targeting the new Computer Science programme in the French high school system, which started in September 2019.

S. Boldo gave a talk and was involved in the organization of the “Rencontres des Jeunes mathématiciennes et Informaticiennes” organized in Saclay on Oct 21st and 22nd 2019. About 20 female teenagers were welcomed for two days with talks and exercises to discover research.

10.3.3. Interventions

C. Marché presented an overview of the Why3 tool and its ecosystem at the Paris Open Source Summit in Saint-Denis, Dec. 11, 2019, as part of a workshop “ATELIER Inria : OCaml, Coq, Why 3: pour concevoir codes et infrastructures plus sûrs en C, Java, Javascript, Ada” <https://www.opensourcesummit.paris/conferences.html?date=1576022400>).

S. Boldo gave a talk at a high school in Sceaux on Feb 8th.

S. Boldo presented the floating-point arithmetic at IRIF to the members of the CODYS ANR on April 1st.

VERIDIS Project-Team

10.3. Popularization

10.3.1. Responsibilities at Inria or Beyond

- Marie Duflot-Kremer is the deputy vice-president for outreach activities in the supervisory council of SIF (*Société Informatique de France*) and a member of the scientific committee of *Fondation Blaise Pascal*.
- Christoph Weidenbach is a member of the advisory committee for the German computer science competitions for pupils. Together with his colleagues at Saarland university he organizes the “Computer Science Research Days” for the most talented high-school students out of the competition every year. In addition, he organizes the final training for the German Informatics Olympiad team and coaches the Saarland University student teams for the ICPC.

10.3.2. Articles and Contents

Marie Duflot-Kremer is a member of the ERASMUS+ project PIAF (cf. section 9.3) with colleagues from Liège, Luxembourg and Saarbrücken. This projects aims at studying how computational thinking can be introduced in primary education (with kids ranging from 5 to 12 years old). The goal is first to agree on a shared reference document on computational thinking competences, and then to produce and test educational scenarios and didactical resources. So far this year the reference document has been designed (and a paper has been submitted recently to a conference). The work on the scenarios and the resources is ongoing.

10.3.3. Education

Marie Duflot-Kremer intervenes in the training of teachers:

- for primary school, half a day for training teachers on how to add a bit of computer science in their teaching;
- for secondary school, she took part (43 hours in 2019) in the advanced training of high school teachers who deliver a newly introduced computer science course (*Numérique et Sciences Informatiques*), and one day training for math teachers about unplugged activities;
- half a day of training for members of INSPE (*Institut National Supérieur du Professorat et de l'Education*), the people in charge of training teachers.

10.3.4. Interventions

Marie Duflot-Kremer takes part every year in several events, including local ones such as *Fête de la Science* (for which she trains 3rd year students to handle the workshops and gave this year a talk/show on “informagics”), *Pint of Science*, a talk for the local phase of the *Tournoi Français des Jeunes Mathématiciennes et Mathématiciens* and the local NSI (*Numérique et Sciences Informatiques*) day for secondary school teachers.

She is also invited for workshops and talks in events outside of the Nancy region, like national or regional days of APMEP (*Association des Professeurs de Mathématiques de l'Enseignement Public*) in Dijon and Grenoble, the SETT conference in Namur or the video game creation competition for kids in Manosque.

10.3.5. Creation of Media or Tools for Science Outreach

As a member of the national group *Informatique Sans Ordinateur* (ISO), Marie Duflot-Kremer takes part in creating new popularization activities and publishing online documentation to help people reproduce unplugged computer science activities. She also proposed and supervised a project of master students in cognitive sciences who created an escape game presenting various computer science concepts to kids from 13 years old. The documentation is available on her webpage.⁰

⁰<https://members.loria.fr/MDuflot/>.

CIDRE Project-Team

9.3. Popularization

9.3.1. Articles and contents

- In books/journals for the general public
Dis, c'est quoi là haut dans le ciel ? C'est un Linux, mon petit ![39], Viet Triem Tong Valérie, Fournier Benoît, Fournier Guillaume, Ouairy Leopold, Cotret Pascal, Guette Gilles, MISC numéro 104, juillet 2019.
- Online publications
La cybersécurité aux multiples facettes. Steve Kremer, Ludovic Mé, Didier Rémy et Vincent Roca. Blog binaire (<https://www.lemonde.fr/blog/binaire/>), 4 juillet 2019.
- White Papers - white Papers for Popularization
Ludovic Mé co-authored (with S. Kremer, D. Rémy and V. Roca) Inria's White Book on Cybersecurity [37].

9.3.2. Interventions

- Valérie Viet Triem Tong has participated to the *Vive la Recherche* event to promote research activities to engineering students at CentraleSupelec
- Valérie Viet Triem Tong has been involved in an artistic performances involving actors and researcher at the **Digital Tech Conference**, December Rennes, France.

COMETE Project-Team

9.3. Popularization

9.3.1. Education

Konstantinos Chatzikokolakis and Catuscia Palamidessi have designed, and coordinate, a course on the Foundations of Privacy at the **MPRI**, the Master Parisien pour la Recherche en Informatique. University of Paris VII. A.Y. Since 2015.

Catuscia Palamidessi has been:

- Invited speaker at **PLMW@POPL 2019**, the Programming Logic Mentoring Workshop 2019 (affiliated to POPL 2019). This workshop aims at encouraging graduate students and senior undergraduate students to pursue careers in programming language research, and at educating them on the research career.
- A participant in the round table on fairness, Interpretability, and Privacy in AI at the **CIFAR-UKRI-CNRS workshop**. London, June 2019.

Frank Valencia has:

- Welcomed the students of bachelor program of École Polytechnique to Inria center. Sept 12, 2019.
- Welcomed visitors from ACOFI, the Colombian Association of Faculties of Engineering to Inria center. April 8, 2019.

9.3.2. Interventions

Catuscia Palamidessi has given an invited talk at:

- **Safety and AI**. DATAIA Workshop. Palaiseau, France, September 2019.

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).

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

PESTO Project-Team

10.3. Popularization

10.3.1. Articles and contents

Véronique Cortier. Some interactions (in collaboration with P. Gaudry and S. Glondu) with France Culture to improve an online article on e-voting.

Steve Kremer co-authored (with L. Mé, D. Rémy and V. Roca) Inria's White Book on Cybersecurity [27].

Steve Kremer In Horizon - The EU Research and Innovation Magazine: Online voting isn't ready for high-stakes elections, Avril 2019.

Steve Kremer, Ludovic Mé, Didier Rémy, and Vincent Roca. In Blog Binaire - Le Monde. La cybersécurité aux multiples facettes.

Steve Kremer. Le vote électronique. Chapter of the book "Treize défis pour la Cybersécurité" édité by CNRS. To appear in January 2020.

Interview with Science & Vie Junior about 5G security (J. Dreier, in "Pourquoi la 5G va tout changer", Science & Vie Junior, Juillet 2019)

Lucca Hirschi, Ralf Sasse, Jannik Dreier in ERCIM News 2019. "Security Issues in the 5G Standard and How Formal Methods Come to the Rescue".

10.3.2. Interventions

Invited conference at the Espace des sciences, Rennes (audience of about 300 people, 5K+ views on Youtube), October, 22nd, 2019 (V. Cortier)

"breakfast" in the Senat, on Cybersecurity, organized by OPECST / Académie des sciences / Académie de médecine, June 19th, 2019. (V. Cortier)

How to explain security protocols with Playmobil, group of high school students interns for a week, February 3rd, 2019, (V. Cortier)

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.

PROSECCO Project-Team

10.3. Popularization

10.3.1. Articles and contents

- Catalin Hritcu contributed an article on Secure Compilation to the SIGPLAN PL Perspectives blog
- Karthikeyan Bhargavan published a paper in Communications of the ACM

TAMIS Project-Team (section vide)