



RESEARCH CENTER
Paris - Rocquencourt

FIELD

Activity Report 2014

Section Popularization

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ALPAGE Project-Team

9.3. Popularization

- Éric Villemonte de La Clergerie has presented some simple NLP tasks at the ISN day (for Math teachers, computer science option, April 8th, http://euler.ac-versailles.fr/webMathematica/reflexionpro/2013_2014/Seminaire/eric_de_la_clergerie.pdf)
- Éric Villemonte de La Clergerie has presented a survey on the use on NLP tools for MOOCs at the Moolab day on “Moocs : de la correction automatique à la personnalisation des cursus” (Paris, January 14th)

ALPINES Project-Team (section vide)

ANGE Project-Team (section vide)

ANTIQUÉ Team

9.3. Popularization

Mehdi Bouaziz gave a course on “Apprendre et enseignement — la programmation informatique des bibliothèques”, Maire de Paris, 12 hours, june-july 2014. Xavier Rival gave a talk on “Safety critical embedded softwares and their verification” at the Ceremony for the “Médailles of Engeniering Sciences” in April 2014. Xavier Rival participated to the organization of the “Nuit des Sciences” in June 2014.

AOSTE Project-Team (section vide)

ARAMIS Project-Team

9.3. Popularization

The team is involved in the BrainCatalogue project (coordinator: Roberto Toro, Institut Pasteur) dedicated to the popularization of neuroanatomical knowledge. The project features MRI scans and 3D reconstructions for various vertebrates species (bear, mouse, macaque, dolphin, leopard, rhinoceros, human, squirrel ...).

The team coordinates the activity of the FreeBorn consortium which aims at promoting the interaction and visibility of the French research teams working on brain connectivity and network theory: <https://sites.google.com/site/fr2eborn/>

CASCADE Project-Team (section vide)

CLASSIC Project-Team (section vide)

CLIME Project-Team

9.3. Popularization

- Marc Bocquet wrote a paper on “La prévision numérique du temps” in the journal “Revue de Technologie” meant for the teachers of vocational technical education.
- Victor Winiarek and Marc Bocquet wrote an internet contribution “de la radioactivité dans l’air”, which was published in the general audience book “Brève de maths”, Nouveau Monde éditions, Paris, 2014.
- Marc Bocquet and Mohammad Reza Koohkan wrote an internet contribution “Quand modèles numériques et mesures ne sont pas sur la même longueur d’onde”, which was also published in “Brève de maths”.
- Vivien Mallet took part to a one-day introduction to Inria research at Assemblée Nationale, as organized by the group “Internet et société numérique”.
- Vivien Mallet introduced data assimilation at urban scale during the “rencontre Inria-industry” organized during the Futur-en-Seine digital festival.

CRYPT Team

6.3. Popularization

Phong Nguyen gave several invited talks:

- [17] at the First NTU-VIASM Workshop on Discrete Mathematics, in Vietnam.
- at the 2014 CTIC-IIS Theory of Cryptography workshop, in China.
- at the Mathematical Workshop of the Chinese Association for Cryptologic Research, in China.

DEDUCTEAM Exploratory Action

8.3. Popularization

Gilles Dowek is the president of the scientific board of the “Société Informatique de France” (SIF).

Gilles Dowek is a member of the scientific board of “La Main à la Pâte”.

Raphaël Cauderlier, Simon Cruanes, Pierre Halmagrand et Ronan Saillard ont participé à l’animation du stand Inria au Salon Culture et Jeux Mathématiques les 24 et 25 mai

Ali Asaf, Raphaël Cauderlier, Simon Cruanes et Pierre Halmagrand ont participé à l’animation du stand Inria lors de la Fête de la Science les 9 et 10 octobre 2014 à Paris

Gilles Dowek has given a talk at Mathenjeans.

Alejandro Díaz-Caro is member of the scientific board of “Ensemble”, a journal of the Maison Argentina at Cité Universitaire in Paris, ISSN 1852–5911.

DYOGENE Project-Team (section vide)

GALLIUM Project-Team

9.3. Popularization

Jacques-Henri Jourdan is involved in the organization of the Junior Seminar of Inria Paris-Rocquencourt.

Jacques-Henri Jourdan manned a stand at “Salon Culture & Jeux Mathématiques”, in Paris.

Since 2012, the Gallium team publishes a research blog at <http://gallium.inria.fr/blog/>, edited by Gabriel Scherer. This blog continued its activity in 2014, with 23 posts from 5 different authors.

GAMMA3 Project-Team (section vide)

GANG Project-Team

8.3. Popularization

Laurent Viennot has written an article on the history of telecommunication networks with a special focus on the phone network and on Internet [13].

Laurent Viennot has animated a weekly workshop on computer science unplugged in the Pouchet primary school in Paris at CM1 level (15h during 2014). The topics covered included Nim game, Euler paths in graphs, and error correcting codes.

HIPERCOM2 Team

9.3. Popularization

- **the Inria-Industry meeting focusing on Telecommunications**, in Rocquencourt, November 2014. The HIPERCOM2 team was very active and presented demonstrations of Wireless Sensor Networks. The demonstration prepared by Erwan Livolant, Cédric Adjih, Ichrak Amdouni, Pascale Minet concerned the principles of wireless sensor networks, the energy-efficient routing protocol, the node coloring algorithm running in the OCARI network to maximize network lifetime. Tuan Dang from EDF presented the new OCARI platform. Maurice Sellin from DCNS explained the deployment of an OCARI network in a DCNS ship, the application supported is fire detection and OCARI sensor nodes are provided by ADWAVE.
- Nadjib Achir, Cédric Adjih, Hana Baccouch, Ichrak Amdouni, Erwan Livolant and Ridha Soua explained the principles of communication and routing in wireless sensor networks and organized several demonstrations for undergraduates and students who visited Inria in February 2014.

LIFEWARE Team

9.3. Popularization

- Grégory Batt has been an invited speaker at the citizen science workshop Worldviews and Values in Synthetic Biology, Paris, June 2014.
- Grégory Batt had a stand at *Rencontres Inria Industries*, Lyon, May 2014.
- Xavier Duportet has been invited to speak at the *4th Congreso del Futuro* (Santiago, Chili), together with renown change makers (e.g. J. Rifkin, T. Piketty)
- Xavier Duportet is the cofounder and president of Hello Tomorrow, an international non-profit organization to promote technology entrepreneurship, with hubs in more than 80 cities worldwide and organizing one of the largest global startup competition.
- Xavier Duportet is the vice president of *Osons La France*, a forum to promote scientific innovation (Grand Palais, Paris, Dec 2014).
- Xavier Duportet has been featured in *Le Monde*, *L'Obs*, *Europe1*, *L'Opinion (2x)*, *SoonSoonSoon*, *L'Atelier*, and *Widoobiz*.
- François Fages gave an invited talk at *Forum des Lauréats en Informatique et Mathématiques Appliquées*, Collège de France, Paris, Dec 2014.
- François Fages gave an invited talk at *Deuxième Journée Biologie et Mathématiques sur la Montagne*, Collège de France, Paris, Oct 2014.
- Artémis Llamosi is the co-fondeur and general secretary of the OpenLab, and organizer of related events on product industrialization. He provides scientific expertise to hosted startups.

Our research has also been presented at many scientific venues, in invited talks at the

- 21st European Conference on Artificial Intelligence, ECAI'14 (Prague, Aug 2014, François Fages),
- 10th International Conference on Distributed Computing and Internet Technology ICDCIT'14 (Bhubanesvar, Feb 2014, François Fages),

contributed talks

- in LyonSysBio conference (Nov. 2014, François Bertaux),
- International Workshop on Image-based Systems Biology (Jena, Sept. 2014, Szymon Stoma),

invited seminars

- IriSa Rennes and LISBP Toulouse (Grégory Batt),

and posters at

- the Systems Biology of Human Diseases workshop (Harvard, June 2014, François Bertaux),
- q-bio summer conference (Santa Fe, Aug. 2014, François Bertaux),
- Stochastic Biology (IST Austria, May 2014, François Bertaux),
- Image Bioinformatics (Leuven, Oct. 2014, Szymon Stoma),
- European Conference on Computational Biology (Strasbourg, Sep 2014, Denis Thieffry, Pauline Traynard),
- International Conference on Systems Biology (Melbourne, Sep 2014, François Fages, Pauline Traynard).

MAMBA Team

MATERIALS Team (section vide)

MATHRISK Project-Team

9.3. Popularization

- A. Sulem, "Nouvelles directions de recherche en Mathématiques financières, Inria Alumni, jam session on Risk, November 25th, Inria, Paris.

MIMOVE Team

8.3. Popularization

- Benjamin Billet was invited to speak at a one-day Android tutorial event organized by the ARAMIS business network at Lyon.

MOKAPLAN Team (section vide)

MUSE Team (section vide)

MUTANT Project-Team

8.3. Popularization

Arshia Cont was invited to a **TEDx Talk** in October 2014 on *Human-Computer Musicianship* that attracted more than 12 thousand podcasts according to organisers.

Arshia Cont was invited to participate in CNRS's 2nd edition of "Les Fondamentales" Science and Society event in Grenoble, in a session dedicated to **Science and Music on the same Score**.

Arshia Cont was invitee to the BFM Business Program on *Future of Sound*.

Arshia Cont was featured in the June Edition of *Usbek et Rica* magazine.

MuTant team participated in the 2014 edition of *Futur en Seine* festival and showcased **collaboration with Orchestre de Paris** in a public event.

Article on Antescofo by Arshia Cont in the December 2014-January 2015 edition of the popular science magazine "Dossier de La Recherche".

José Echeveste, Arshia Cont and Jean-Louis Giavitto participated to the colloquium "La musique en temps réel" in the festival Musica, Strasbourg, september 2014.

Jean-Louis Giavitto participated to the colloquium "Le calcul et le temps, colloque de philosophie de l'informatique" Université Jean Moulin (Lyon 3), novembre 2014. He was invited on several seminars outside computer sciences: EPFL - ArchiZoom, "computational morphogenesis" in the context of the architecture exhibition "Animal ?" (april 2014); the elmlalfructidor art school in Chalons, "space and the formalization of musical processes" (april 2014); CNSMD Lyon and the Ecole Normale Lyon, "Du temps écrit au temps produit" with Julia Blondeau (april 2014); CISEC (club Inter-associations – AAAF, SEE, SIA – des Systèmes Embarqués Critiques), "Temps Réel en musique : Antescofo" (Toulouse June 2014).

Florent Jacquemard participated to the Inria seminar "1/2 hour of science" in July 2014, with a talk on Testing and Verification of interactive music systems.

MYCENAE Project-Team

8.3. Popularization

- M. Desroches is section-chief editor of the media gallery of DSWeb, a website dedicated to dynamical systems <http://www.dynamicalsystems.org/pi/>.
- Participation to the scientific popularization book “La Reproduction animale et humaine” [29]

PARKAS Project-Team

8.3. Popularization

T. Bourke hosted a tutorial by Makarius Wenzel at ENS Ulm on the Isabelle proof assistant.

Pl.R2 Project-Team

7.3. Popularization

Pierre-Louis Curien wrote the editorial of a special “hors série” issue of the information letter of The Fondation Sciences Mathématiques, entitled “Des preuves et des programmes”, may 2014. He wrote an introductory article “Formalisation mathématique, certification logicielle, même combat!” in the journal *Gazette des Mathématiciens* 142, 83-86 (octobre 2014).

Lourdes González-Huesca and Étienne Miquey took part in the animation of the “Fête de la Science” event at the University Paris 7.

Étienne Miquey took part in the animation of several activities about mathematics in elementary and high schools of Paris.

Yann Régis-Gianas co-organised the “Journée Francilienne de Programmation”, a programming contest between undergraduate students of three universities of Paris (UPD, UPMC, UPS).

Yann Régis-Gianas organised the “Fête de la Science” event for the computer science department of the University Paris 7.

Yann Régis-Gianas and Pierre Letouzey took part in the “Salon Culture et Jeux mathématiques” at Saint Sulpice, Paris.

Yann Régis-Gianas gave several conferences about “What is programming?” in elementary and high schools of Paris.

POLSYS Project-Team

8.4. Popularization

Guénaél Renault was invited speaker for the workshop *Fabriquer le Hazard du forum Science, Recherche et Société* (May 22, 2014) organized by the newspapers Le Monde et La Recherche.

POMDAPI Project-Team

8.3. Popularization

J. Ch. Gilbert has written the following page on Wikipedia.fr in 2014: [Optimisation quadratique](#).

M. Kern participated in a meeting with high school students during the “Fête de la Science” (CNAM, Paris, October 3rd, 2014), and gave presentations on the theme “Mathematics and Simulation for Underground Water” to middle school and high school students.

PROSECCO Project-Team

8.3. Popularization

8.3.1. Seminars

- Graham Steel: invited talks at FCS-FCC 2014 (Vienna)
- Graham Steel: invited keynote at Grande Region security day (Saarbrücken).
- Bruno Blanchet: invited talk at the Dagstuhl seminar “The synergy between programming languages and cryptography”.
- Karthikeyan Bhargavan: invited talk at the IETF TLS Working Group to discuss the Triple Handshake Attack (London)
- Karthikeyan Bhargavan: invited talk at the Dagstuhl seminar “The synergy between programming languages and cryptography”.
- Karthikeyan Bhargavan: invited talk at Les Journées Scientifiques Inria in Lille
- Karthikeyan Bhargavan: invited panelist at Security Standardization Research workshop in Surrey UK
- Karthikeyan Bhargavan: invited keynote at Santa’s Crypto Workshop 2014 (Prague)
- Antoine Delignat-Lavaud: briefing at BlackHat USA on “The BEAST Wins Again: Why TLS Keeps Failing to Protect HTTP”
- Catalin Hritcu: invited keynote at Grande Region security day (Saarbrücken).
- Catalin Hritcu: seminar at Groupe de travail LTP du GDR GPL
- Catalin Hritcu: seminar at Groupe de travail Théorie des types et réalisabilité

8.3.2. Vulnerability Reports

- Karthikeyan Bhargavan, Antoine Delignat-Lavaud, and Alfredo Pironti reported the so-called Triple Handshake attacks on TLS implementations leading to security updates to all major web browsers: Google Chrome (CVE-2013-6628), Mozilla Firefox (CVE-2014-1491), Internet Explorer (CVE-2014-1771), Apple Safari (CVE-2014-1295), as well as to non-browser TLS libraries such as Oracle JSSE (CVE-2014-6457) and RSA BSAFE (CVE-2014-4630). For more details, see <http://secure-resumption.com>
- Antoine Delignat-Lavaud reported virtual host confusion attacks on a number of web servers, leading to security updates to the Akamai content delivery network, Dropbox, Bugzilla, as well as the NGINX web server. His results were presented at BlackHat USA and are summarized at <http://bh.ht.vc>
- Karthikeyan Bhargavan reported state machine attacks on major TLS libraries, such as OpenSSL (CVE-2014-3572), NSS, JSSE, CyaSSL, and SecureTransport, leading to security updates in all these libraries.

QUANTIC Team

7.3. Popularization

The high profile publications in Nature and Science are popularizing the new field of quantum engineering.

A. Sarlette has been giving talks on "reservoir engineering" to the (non-quantum) control community during several seminars.

M. Mirrahimi was an invited plenary speaker at CANUM (Congrès National d'Analyse Numérique) 2014, where he gave a public presentation on quantum feedback and quantum reservoir engineering.

RAP Project-Team (section vide)

REGAL Project-Team

8.3. Popularization

The team animated a stand on distributed algorithms at the 2014 edition of "Fête de la Science"

REO Project-Team

9.4. Popularization

- Matteo Aletti
 - presentation at "Incontro Neo-Laureati" (Conférence jeunes diplômés) at Politecnico di Milano
 - presentation about REVAMMAD project at ArtVerona
- Céline Grandmont
 - Popularization paper "Inspiration mathématique: la modélisation du poumon", in *Mathématique l'explosion continue*, edited by SFdS, SMAI, SMF.
 - Conference «Nuit des Sciences, ébullition», ENS Paris, june 2014
 - Conference «Mathematic Park a Bobigny», 300 students (high school level), oct. 2014
 - Conference «Filles et Maths: une equation lumineuse», 60 students, (high school level), oct. 2014.
- Irene Vignon-Clementel
 - Conference in High School Blanche de Castille, March 25th, Le Chesnay

RITS Team

9.3. Popularization

Several members of the team have participated in:

- The exhibition Futur-en-Seine (June 12-22 2014).
- The final Demonstration of Link & Go Project: Automated driving functionalities and SLAM, September 2014 at Magny les Hameaux, France.
- Showcase of CityMobil2: Autonomous maneuver in urban scenarios. September 2014, at Leon, Spain.
- Showcase of CATS project: Autonomous functionalities. October 2014, at Ploiesti, Rumania.
- Large-scale demonstration of automated transport of CityMobil2, December 2014, at La Rochelle.

SECRET Project-Team

9.3. Popularization

- Anne Canteaut has been invited to give the annual Computer Science Talk for the new students at Ecole Polytechnique, Palaiseau, June 2014 [79].

SIERRA Project-Team

8.3. Popularization

S. Lacoste-Julien, Lecture "Apprentissage statistique et big data", Colloque Algorithmique et Programmation, CIRM, Luminy, France, April.

S. Lacoste-Julien, General public talk to high school students having participated in the mathematics olympiad of académie de Versailles "Apprentissage statistique et big data" at Inria-Rocquencourt, Rocquencourt, France, June.

S. Lacoste-Julien, Demi-heure de la science "Apprentissage automatique et big data", at Inria-Rocquencourt, Rocquencourt, France, November.

S. Lacoste-Julien, July-Dec: helped Sydo for making a popularization video for Inria on the theme of "Simulation and machine learning".

SISYPHE Project-Team (section vide)

SMIS Project-Team

9.3. Popularization

- "Les enjeux du Big Data", TV interview of P. Pucheral, Future-Mag, Arte, September 20th, 2014.
- Tutorial on experimental methodology at the BDA summer school 2014 "Masses de données distribuées". L. Bouganim
- Tutorial on managing personal data with strong privacy guarantees at EDBT 2014 [18].
- Présentation invitée au Lycée Albert Einstein sur 'Minimum Exposure', Sainte-Geneviève-des-Bois, Apr. 2014, B. Nguyen.
- Séminaire en deux parties à Luminy, pour les enseignants de CPGE sur 'les bases de données en CPGE, programme officiel et aspects transactionnels', Marseille, 2014-04-22, B. Nguyen.
- Présentation invitée aux journées "La Science Informatique pour tous les lycéens", à Rocquencourt, Apr. 2014, B. Nguyen.
- Le droit à l'oubli numérique, table ronde, Colloque 'La protection des données personnelles : approche pluridisciplinaire', Paris, Dec. 2014, B. Nguyen.
- 'Représenter et interroger efficacement de grands volumes de données : une introduction aux bases de données relationnelles', olympiades de mathématiques, Paris, May 2014, B. Nguyen
- 'Comment garantir la confidentialité des données médicales ?', Environrisk, Atelier risques numériques, Nov. 2014. Chairman: B. Nguyen (Inria). Speakers : N. Anciaux (Inria), C. F. Viala (YesProfile).
- 'Garantir la confidentialité des données personnelles', Futur en Seine, Rencontres Inria-Industries, June 2014, N. Anciaux.
- 'Vers un modèle de gestion des données respectueux de la vie privée : application à la collecte limitée d'informations personnelles', IREP "BIG DATA" Seminar, May 2014, N. Anciaux.
- 'Les patients dans l'écosystème de santé - Enjeux d'information et questions de communication', International Seminar organized by the "Institut des sciences de la communication CNRS" with the participation of the "Groupe de réflexion avec les associations de malades (GRAM Inserm)", Dec. 2014, N. Anciaux et P. Pucheral.
- 'La protection des données personnelles - approche pluridisciplinaire', Seminar organized by the Digital Society Institute (ISN), Dec. 2014, N. Anciaux and P. Pucheral
- 'Démonstration du Dossier Médico-Social Portable et sécurisé', Rencontres Inria Industrie, Télécoms du futur, Nov. 2014, Q. Lefebvre and N. Anciaux.
- 'Table ronde : Sécurité des Réseaux et Contenus', Rencontres Inria Industrie, Télécoms du futur, Nov. 2014, L. Bouganim

TEMPO Team (section vide)

WHISPER Team

9.3. Popularization

Julia Lawall presented a tutorial on Coccinelle at ENS (Masters students), the IT University of Copenhagen (PhD students), at the Suse Labs conference (developers), at LinuxCon Europe (developers), and at Middleware (PhD students and researchers).

WILLOW Project-Team (section vide)