



RESEARCH CENTER
Bordeaux - Sud-Ouest

FIELD

Activity Report 2017

Section Popularization

Edition: 2018-02-19

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LFANT Project-Team

8.3. Popularization

The book *Guide to Pairing-Based Cryptography* [26] has been published by CHAPMAN and HALL/CRC. D. Robert wrote with Sorina Ionica the chapter “Pairings” of this book. This book aims to help Engineers understand and implement pairing based cryptography; in the Chapter “Pairings”, D. Robert give a self contained definition and proof of the Weil and Tate pairing; including how to handle divisors with non disjoint support (this is often skipped in scientific papers but is important for practical implementations).

A. Page gave a popularization talk “À la découverte de la cryptologie : la science du secret” during the Fête de la Science event. Two groups of high school students and one group of Inria agents participated in this activity. Following this talk, three high school students decided to work on the RSA cryptosystem for their TPE essay and came back to the IMB to meet A. Page and talk about this topic in greater detail.

CAGIRE Project-Team

10.3. Popularization

- «Forum des Métiers» organized by "Collège Pierre Emmanuel", Pau (64), France, 18 May 2017. A stand was manned during one day with the objective of explaining the activity of researcher to an audience of middle school students. [PB]

CARDAMOM Project-Team (section vide)

CQFD Project-Team (section vide)

GEOSTAT Project-Team

10.3. Popularization

Diffusion of the GENESIS project in the magazine Inria PLUGIN (published beginnig 2018) and in the Inria website (national and INRIS BSO), see <https://www.inria.fr/centre/bordeaux/actualites/lancement-du-projet-genesis>.

MEMPHIS Project-Team

10.3. Popularization

Lisl Weynans has co-organized the *Journée Filles et Maths, une équation lumineuse*, April 2017.

Afaf Bouharguane and Lisl Weynans have co-organized the *Journée Emploi Maths de l' Unité de Formation Mathématiques et Interaction*, November 2017.

REALOPT Project-Team

10.3. Popularization

- François Clautiaux is a member of the board of AMIES, the French Agency for Interaction in Mathematics with Business and Society. AMIES is a national organization that aims to develop relations between academic research teams in mathematics and business, especially SMEs.
- Olivier Beaumont participated to “Unithé ou Café” (May 19, 2017), a local event dedicated to popular science on the topic of online algorithms.
- Olivier Beaumont participated to “La Fête de la Science” (October 3 and 4, 2017) on the computation of PageRank.

CARMEN Project-Team

9.3. Popularization

L. Weynans:

- Responsible for the communication (*Chargé de communication*) of the IMB
- Organization of the day “Filles et Maths, une équation lumineuse”
- Several presentations for high-school students about scientific computing

MAGIQUE-3D Project-Team

9.3. Popularization

- Juliette Chabassier shared her experience as a scientist in the collège de Lussac in March 2017.
- Juliette Chabassier participated in scientific “speed datings” during the “Filles et Maths” day in April 2017.
- Juliette Chabassier shared her experience as a scientist during “Printemps de la Mixité” in May 2017.
- Juliette Chabassier presented a talk around mathematics in music in Pau in April 2017.
- Juliette Chabassier co-organized a series of three conferences around the theme of women in informatics in 2017.
- Juliette Chabassier gave a talk about mathematics in music in Bordeaux during the "découvreuses anonymes" exposition in November 2017.
- Juliette Chabassier presented a workshop around mathematics in music in November 2017.
- Juliette Chabassier gave a pitch of science during the national event "50 ans Inria" in November 2017.

MNEMOSYNE Project-Team

10.3. Popularization

For a multi-disciplinary team as Mnemosyne, science popularization is not only a nice and useful contribution to the dissemination of scientific knowledge but also a necessity since we work with colleagues from bio-sciences with whom sharing profound ideas in computer science is mandatory for a real collaboration.

- Thierry Viéville is for 50% of his time involved in popularization actions, mainly computer science large audience education, and has been promoted Officer of the Order of Academic Palms for the collective contribution of the Inria Science Outreach mission.
- F. Alexandre organized a conference about artificial intelligence with high-school children (Sept. 28, Lormont)
- I. Chraïbi Kaadoud participated to the regional challenge: “My PhD in 180 seconds”
- X. Hinaut organized the 1st hackathon of Bordeaux in Cognitive Sciences and Artificial Intelligence, 8-10 December, Cap Sciences, Bordeaux. (<https://mindlabdx.github.io/hack1cerveau/>); Organization of a workshop on cellular automaton at Le Node, Bordeaux; Meeting groups of high-school students for their projects on Artificial Intelligence topics.
- The team participated to “La semaine du cerveau” on the Bordeaux Neurocampus (March 13-17) (<http://www.bordeaux-neurocampus.fr/fr/manifestations-scientifiques/seminaires-2017/semaine-cerveau-2017.html>); to the “fête de la science” on the Bordeaux Neurocampus (<http://circuit-scientifique-bordelais.cnrs.fr/modules/show/261>, Oct. 7-9); to the Declics program for high-schools (<http://www.cerclefser.org/fr/declics/>, Dec. 12)

MONC Project-Team

9.3. Popularization

- Sébastien Benzekry: Interview pour le journal « Sciences et Avenir ».
- A. Collin : Printemps de la mixité (une présentation sur le calcul scientifique devant 2 classes de première), Institut Mathématiques de Bordeaux, 04/04/17, <https://www.u-bordeaux.fr/Actualites/De-l-universite/Le-Printemps-de-la-mixite>.
- A. Collin: Filles & Maths (table ronde avec des lycéennes autour des études mathématiques et des applications des mathématiques), Université de Bordeaux, 05/06/2017, <https://math-interactions.u-bordeaux.fr/Centres-de-ressources/IREM/Actions/Journee-Filles-et-Maths>.
- A. Collin: Fête de la Science, Inria Bordeaux, 10/10/2017.
- A. Collin: Nuit des chercheurs, Cap Sciences, Bordeaux.
- A. Collin: Cinéma Sciences (discussion avec le public sur les mathématiques après la projection du film "Les figures de l'ombre"), Cinéma de Mérignac 18/05/2017.
- O. Saut: Les Entretiens de l'Excellence 2017 <http://www.lesentretiens.org/>.
- O. Saut: Table ronde "Comment l'innovation transforme les métiers de la santé", Journées Nationales de l'Innovation en Santé, 27-29 janvier 2017, cité des Sciences et de l'Industrie / webradio Cnrs.

PLEIADE Team

8.3. Popularization

David Sherman of PLEIADE coached two teams in Thymio R2T2 Challenges ⁰, organized by the Mobsya association and the EPFL in Spring and in Summer 2017. An R2T2 challenge brings together 16 teams (for the Mars mission, 4 teams for the Lunar mission) of children who must cooperate to remotely program Thymio robots. The Lunar mission in July was a public demonstration during the Scratch 2017 conference in Bordeaux.

David Sherman contributes open-source software development to the Aseba platform for educational robotics ⁰, deployed in Thymio II robots used by children as well as in the simulator used by Class'Code ⁰ to train teachers.

⁰Remote Rescue Thymio II <https://www.thymio.org/en:thymio-r2t2>

⁰<http://aseba.io/>

⁰<https://pixees.fr/classcode-la-formation-associee-a-pixees/>

SISTM Project-Team

10.3. Popularization

Participation to the Inria magazines “Plug-in” and “So news” (Mélanie Prague).

Participation in “The ou café” in Inria Bordeaux (Mélanie Prague).

Lightning talk to present the NIMROD software in Dev Days at Inria (Mélanie Prague).

Edouard Lhomme, as President of AquitHealth, a non profit organisation for the development of e-Health in south west France organized the When Doctors Meet Hackers (WDMH) Congress 2017. The WDMH Congress is a 3 day event with one day of conference on the futur of health and 50 hours of hackathon. The Hackathon is a human adventure where healthcare professionals, patients, developers, designers and entrepreneurs collaborate over a weekend to develop prototypes of eHealth solutions. Six WDMH meetups were also organised each month from January to June 2017 in Bordeaux to discuss about several e-health topics (telemedecine, data protection, simulation, ...)

HIEPACS Project-Team (section vide)

PHOENIX Project-Team

9.3. Popularization

Nic Volanschi participated on October 12th to the “Science fest” at Inria Bordeaux, where he gave 3 workshop sessions on “Manual digital sciences” for children aged 11 to 15. These workshop sessions were aimed to communicate basic notions of computer science to young students by using puzzles and games.

Antoine Riché and Nic Volanschi presented, to a professional audience coming from various digital-related industries, some of the technologies developed in the team, at the Inria-Industry Meeting on October 17th-18th in Paris centered on “Data and their applications”.

Cécile Mazon participated to the following popularization events:

- “1er Salon du livre et du numérique pour les dys”, on 3rd may 2017. Representing the research center jointly with P.-A. Cinquin (Potioc team); presenting and demonstrating the Collège+ app for iPad.
- “PubHD Bordeaux”, on 24th october 2017. Event consisting in presenting her PhD work “Technologies pour la scolarisation des collégiens avec TSA” without slides nor scientific jargon.
- Guest of the radio show "Que cherchent-ils", on RCF Bordeaux. 25 minutes for presenting her PhD work around autism and technologies. The show was recorded in december 2017 and will be broadcast in february – march 2018.
- Largely open congress “ITASD”, in july 2017, Valencia, Spain. “Effectiveness and Usability of Technology-based interventions for children and adolescents with ASD: A systematic review of reliability, consistency, durability and generalization related to the effects of interventions”. The abstract is available within the conference proceedings.

STORM Project-Team

9.3. Popularization

- Séminaire Inria Bordeaux Sud-Ouest, Unithé ou Café, septembre 2017 sur la programmation parallèle (D. Barthou)
- Fête de la Science à l’Inria Bordeaux Sud-Ouest, ateliers Datagramme et Digit’elles, octobre 2017 (E. Saillard)
- Fête de la Science, ateliers Datagramme et Sciences Manuelles du Numérique, octobre 2017 (Y. Khorsi et C. Salingue)
- Printemps de la Mixité, atelier Datagramme, avril 2017 (C. Salingue)
- J’ai un bug, qu’est-ce que je peux faire ?, Mars 2017 (S. Thibault)
- Mon code en 180 secondes: StarPU+KStar, Journées SED Bordeaux, October 2017 (O. Aumage)

TADaaM Project-Team

10.3. Popularization

10.3.1. Duties

Guillaume AUPY was in charge of hosting the undergraduate students (L3) from ENS Lyon and later ENS Cachan at Inria Bordeaux-Sud Ouest.

Brice GOGLIN is in charge of the diffusion of the scientific culture for the Inria Research Centre of Bordeaux. He organized several popularization activities involving colleagues.

Brice GOGLIN was a member of the *CGenial* contest for science projects in high schools.

François PELLEGRINI is vice-president of université de Bordeaux, in charge of digital issues.

10.3.2. Online Content

François PELLEGRINI wrote a tribune in the Binaire blog run by Inria staff and hosted by Le Monde, on the “loyalty of data processing”. See: <http://binaire.blog.lemonde.fr/2017/03/27/les-algos-ni-loyaux-ni-ethiques/>.

10.3.3. Teaching and Education

- Brice GOGLIN was involved in the MOOC *Informatique et Création Numérique* which focuses at bringing basics about computer science to high-school teachers. After recording videos, he answered numerous questions on the forum, and during a live hangout about computer architectures and networks. More than 12 000 people registered to the course, and more than 1 200 successfully finished it.
- Brice GOGLIN presented tools for teaching basics of computer science in classes at the teachers’ forum at Cap Sciences.
- François PELLEGRINI participated in the creation of video contents for the MOOC *Innov+*, on the economics of innovation, published on the FUN platform. His contribution concerns the software economy and law. See: <https://www.fun-mooc.fr/courses/course-v1:ubordeaux+28002+session01/about>.
- François PELLEGRINI was offered the chair on digital issues at *Université populaire de Bordeaux*, and gave four lectures on: “The digital revolution”, “Liberties in the digital age”, “Personal data and big data”, “Software law and libre software”. See: <http://www.upbordeaux.fr/Le-numerique>.

10.3.4. Talks and Hands-on

- Guillaume AUPY presented problems revolving around High-Performance Computing to High-School students during *Fête de la Science*.
- Guillaume AUPY gave a talk at the seminar *Convergence des Droits et du Numérique* about differences and common grounds between mathematical logics and juridic logics.
- Brice GOGLIN gave several talks about computer architecture, high performance computing, and research careers to general public audience, school students. He also gave several hands-on sessions about basics of algorithmics and computer science.
- François PELLEGRINI gave many talks on liberties in the digital world, digital sovereignty, software law and economy, artificial intelligence for legal practice, etc., in front of various audiences: Cap Sciences, ESI Brussels, Lycée Borda in Pau, FACTS festival on arts & sciences in Bordeaux, Cinéma Utopia, CURIE congress in Marseille, Observatoire de Nice, the Defense Security Cyber summer school in Bordeaux, the Réseau Cepage of CNRS Aquitaine, etc.

10.3.5. Popularizing inside Inria

Guillaume AUPY presented problems revolving around High-Performance Computing during the seminar *Unithé ou Café*.

FLOWERS Project-Team

10.3. Popularization

10.3.1. Duties

D. Roy is member of the Class'code team (Inria is member of the consortium of this project) <https://pixees.fr/classcode/accueil/>. Class'code is a blended formation for teachers and animators who aim to initiate young people to computer science and robotics. D. Roy has in charge the robotics module of the project.

D. Roy is adviser of the organization of computer science exhibition in "Palais de la découverte" which will begin on 2018 March. He helps for robotics part.

D. Roy is member of the team "Education en Scène" which organize educational activities with robotics in Bordeaux Digital City.

D. Roy is member of the scientific committee of "Didapro Didactic" Conference which will be held in Lausanne (Switzerland) on 2018 February.

D. Roy is member of the Robocup Junior French committee, an international robotics challenge <http://rcj.robocup.org/>.

D. Roy is member of the scientific committee of "Ludovia CH" Conference which will be held in Yverdon (Switzerland) on 2018 March.

D. Roy is project leader of Thymio Simulator for Classcode project. Specifications and coordination of work.

D. Roy is project leader of Thymio Scratch and Thymio Snap! development, with D. Sherman. Inria, EPFL and Mobsya collaboration.

PY. Oudeyer continued to be the PI of the Poppy Education project.

10.3.2. Online content

Stephanie Noirpoudre. Atelier Poppy Ergo Jr au CERN. Description and feedback of a workshop on the construction and programming of the robotic arm Poppy Ergo Jr as part of the Coding Pi Science Event. [83]

Stephanie Noirpoudre. Robotic workshop at CERN. Description and feedback of a workshop on the construction and programming of the robotic arm Poppy Ergo Jr as part of the Coding Pi Science Event. [84]

Stephanie Noirpoudre, Kelian Schindowsky. Poppy Education présent à la journée EIDOS 64 : Le forum des pratiques numériques pour l'éducation. Description and feedback of the 9th edition of the EIDOS64 day (the digital practice forum for education). [85]

Sylvain Soulard, Kelian Schindowsky. Description of activity "Modeling of the Port of Rotterdam" using the robot arm Poppy Ergo Jr and created by Sylvain Soulard, middle school teacher in technology. He started the problem: how to optimize and secure the transport of containers in a commercial port? [88]

Kelian Schindowsky. Un projet étudiant : des mains pour Poppy Torso ! Utilisation de la plateforme Poppy pour un projet étudiant. A use of the Poppy platform for a student project: 4 Poppy Torso robots modified by the students of the Bordeaux-Talence campus clashed in the large amphitheater. A competition of a new kind including free figures and imposed figures. [87]

Kelian Schindowsky. Des roues pour le robot Poppy Torso : New Bachelor of Technology students from ENSAM (Talence) worked on the Poppy Torso robot, the goal this time was to equip it with a mobile platform. [86]

10.3.3. Teaching and Education

10.3.3.1. Poppy Education

January 2017, meeting with partner teachers

March 2017, meeting with partner teachers

March 2017, training day with new teachers partners - Building and programming the robot Poppy Ergo Jr

May 2017, meeting with partner teachers

September 2017, meeting with partner teachers

June 2017, training day with workers from Cap'Metier and Cultures électroniques (for scientific mediation purpose) to initiate to robotic - Building and programming the robot Poppy Ergo Jr

10.3.3.2. Inirobot

May 2017, Plan national de formation organised by La main à la pâte (Paris): D. ROY - Train future trainers to initobot curriculum

April 2017, Training days organized by Main à la pâte for National Education (CEA Saclay): T. Desprez, S. Noirpoudre, D. Roy, Théo Segonds - Train a group of teachers to inirobot

10.3.4. Talks and Hands-on

10.3.4.1. KidBreath

Ma Thèse en 180 secondes, March 2017, Bordeaux, France, A. Delmas (oral presentation),

La nuit européenne des chercheurs, September 2017, Bordeaux, France, A. Delmas (oral presentation).

10.3.4.2. Poppy Education

January 2017, Eidos64 event - Le forum des pratiques numériques pour l'éducation (Lons): S. Noirpoudre, K. Schindowsky - Talk to present Poppy Education

Janvier 2017, Visit organized by Le Conseil Départemental des Jeunes (Inria Bordeaux Sud-Ouest): S. Noirpoudre - Programming workshops (for middle school students) to initiate in programmation with Poppy Ergo Jr robot

January 2017, Robotics training day organised by Maison pour la Science (Inria Bordeaux Sud-Ouest): S. Noirpoudre, T. Desprez - Programming workshop (for futur trainers) to initiate in programmation with Poppy Ergo Jr robot

January 2017, R2T2 AmeriCarabean (island of Martinique) : D. Roy - Co-organization with EPFL and ESPE of Martinique - International event (Mexico, Quebec, Guyane, Sainte Lucie) about robotics for education <http://www.reseau-espe.fr/actualites/espe-de-martinique-le-defi-r2t2-americaire-ete-releve>

March 2017, Education exhibition Eduspot (Paris): S. Noirpoudre - Exhibition stand to present the robotic platform Poppy and the use in Education

March 2017, Le printemps de la mixité event (Inria Bordeaux Sud-Ouest): S. Noirpoudre - Robotics workshops (for high school students) to initiate in programmation with Poppy Ergo Jr robot

April 2017, Training days organized by Main à la pâte for National Education (CEA Saclay): T. Desprez, S. Noirpoudre, D. Roy, Théo Segonds - Train a group of teachers to robotics and programmation with Poppy Ergo Jr robot

May 2017, Plan national de formation organised by La main à la pâte (Paris): S. Noirpoudre - Talk to present Poppy Education project and Poppy Ergo Jr

May 2017, Innorobo (Paris): S. Noirpoudre, K. Schindowsky, T. Segonds, D. Roy: Exhibition stand to present the robotics platform Poppy and the use in Education

May 2017, Innorobo Robotics and Education Forum (Paris): S. Noirpoudre - Talk to present Poppy Education and the robot Poppy Ergo Jr

May 2017, Robot makers'day (Talence): K. Schindowsky - Exhibition stand to present Poppy Education and Poppy robots

May 2017, RII Santiago (Santiago de Chile, Chile): T. Segonds - Exhibition stand to present Poppy Education and Poppy robots - Event organized by Inria Chile

May 2017, Bordeaux Geek Festival (Bordeaux): K. Schindowsky - Workshops to initiate in programming

May 2017, PY. Oudeyer gave an invited presentation on "Robotics and cognitive sciences" at Festival Filosofia, St. Emilion, France

June 2017, Internships: observation Sequence for Grade 3 Students (Inria Bordeaux Sud-Ouest - Welcomed two students from middle-school during a week to discover the working environment and to introduce them to robotics

June 2017, Robotics workshop for a primary class (Inria Bordeaux Sud-Ouest): S. Noirpoudre, T. Desprez - Poppy Education and inirobot workshops

June 2017, EIAH : Environnements informatiques pour l'apprentissage humain (Strasbourg): S. Noirpoudre, T. Desprez - Talk to present the article "Poppy Education : un dispositif robotique open source pour l'enseignement de l'informatique et de la robotique"

June 2017, EIAH : Environnements informatiques pour l'apprentissage humain (Strasbourg): T. Desprez, S. Noirpoudre - Exhibition stand to present the robotics platform Poppy and the use in Education

June 2017, Rencontre avenir numérique alsace (strasbourg): S. Noirpoudre - Talk in videoconference to present Poppy Education and the robot Poppy Ergo Jr

June 2017, Playback of "Poppy entre dans la danse" project (Le Cuvier, Artigues-près-Bordeaux): T. Deprez, T. Segonds - Technical assistance of a secondary school performance melting danse and robotics

July 2017, Symposium Education and Robotics (Bordeaux): D. Roy (coordinator) and Flowers Team Members - Organization of the colloquium

July 2017, Symposium Education and Robotics (Bordeaux): S. Noirpoudre - Talk to present Poppy Education project

July 2017, Symposium Education and Robotics (Bordeaux): PY. Oudeyer - Talk to present Flowers educational robotics projects

July 2017, Symposium Education and Robotics (Bordeaux): S. Noirpoudre - Exhibition stand to present the robotics platform Poppy and the use in Education

July 2017, 10th International Scratch conference (Bordeaux): D. Roy - Member of the Scratch organizing committee, member of the scientific committee - the conference organization begun on december 2017

July 2017, 10th International Scratch conference (Bordeaux): T. Segonds - Talk to present Poppy Education project

July 2017, 10th International Scratch conference (Bordeaux): S. Noirpoudre - Exhibition stand to present the robotics platform Poppy and the use in Education

August 2017, Fab13 Fabricating Society Conference (Santiago de Chile, Chile): T. Segonds - Talk on Poppy Education - Two days workshop on using and modifying Poppy robots

August 2017, Ludovia Conference (Ax-Les-Thermes): D. Roy - PArtnership with Region Nouvelle Aquitaine and Académie of Bordeaux for an exhibition stand with Poppy Education - Exhibitions, demos, talks

October 2017, Coding Pi Science Days (CERN and Hepia engineering school at Geneva): T. Segonds, T. Desprez - Talk to present the robotics platform Poppy and the use in Education - Three days robotics workshops on building and programming a Poppy Ergo Jr robot

October 2017, Fête de la science (Inria Bordeaux Sud-Ouest): D. Roy - special event with a robotics workshop and several demos at Inria Center, with members of staff of Bordeaux Metropole and political actors

October 2017, Fête de la science (Inria Bordeaux Sud-Ouest): T. Segonds, T. Desprez - 8 programming workshop in 2 days (with middle school students) using Snap! and the robot Poppy Ergo Jr

November 2017, JNRR (National Days of Robotics Research, Biarritz): D. Roy (moderator), P.-Y. Oudeyer (speaker) - Talk on Educational Robotics -

December 2017, Digital Tech Rennes (Rennes): T. Segonds, B. Busch - Talk on Poppy Education - Poppy Ergo Jr programming workshop

December 2017, Aperobot Bordeaux (Bordeaux): T. Segonds - Poppy Ergo Jr programming workshop

December 2017, Internships: observation Sequence for Grade 3 Students (Inria Bordeaux Sud-Ouest) - Welcomed three students from middle-school during a week to discover the working environment and to introduce them to robotics

10.3.4.3. Other

Members of the Flowers team participated to many interviews and documentaries for the press, the radio and television.

10.3.5. Popularizing inside Inria

- March 2017, training day with Inria workers from scientific mediation - Building and programming the robot Poppy Ergo Jr
- October 2017, DevDays (Inria Bordeaux Sud-Ouest): D. Caselli - Presentation of the hotspot tool used in Poppy Ergo Jr robot
- December 2017, Séminaire de la médiation Inria (CNAM, Paris): T. Segonds, S. Noirpoudre, D. Roy - Poppy Ergo Jr programming workshop for people involving in scientific outreach of Inria

10.3.6. Creation of Material for Popularization

As part of the Poppy Education project, thanks the robotic platform Poppy we created pedagogical kits open-source and low cost for teaching computer science and robotics. It is designed to help young people to take ownership with concepts and technologies of the digital world.

The Pedagogical kits includes robots and pedagogical resources. They have been co-created directly with users (mainly high schools teachers) and evaluated in real life by experiments in classrooms [81].

The activities were designed with the visual programming language Snap! (Scratch like) and Python, but some are in Java / Processing (thanks the robot API you can use the language of your choice).

Most activities are using the robot Poppy Ergo Jr, but some use Poppy Torso (mostly in higher school because of its cost) and Poppy Humanoid (in kinder-garden for dance projects) :

- The Poppy Ergo Jr robot is a small and low cost 6-degree-of-freedom robot arm. It consists of simple shapes which can be easily 3D printed. It has several 3D printed tools extending its capabilities (there are currently the lampshade, the gripper and a pen holder but you can design new ones). They are assembled via rivets which can be removed and added very quickly with the OLLO tool. Each motor has LEDs on (8 different color can be activated). The electronic card (raspberry Pi) is visible next to the robot, that allow to manipulate, and plug extra sensors.
- The Poppy Torso robot is an open-source humanoid robot torso which can be installed easily on tablets. More affordable than the robot Poppy Humanoid, it is an ideal medium to learn science, technology, engineering and mathematics.

We continued to improve the robots functionalities and you can see below the resources we created :

- A website have been created to present the project and to share all resources and activities.

<https://www.poppy-education.org/>

- To complete the pedagogical booklet [48] that provides guided activities and small challenges to become familiar with Poppy Ergo Jr robot and the Programming language Snap! (<https://drive.google.com/file/d/0B2jV8VX-lQHwTUxXZjF3OGxHVGM/view>) we provided a list of Education projects. Educational projects have been written for each activity carried out and tested in class. So each projects have its own web page including resources allowing any other teacher to carry out the activity (description, pedagogical sheet, photos / videos, pupil's sheet, teacher's sheet with correction etc.). There is now 32 activities documented available on Poppy Education website.

You can see the activities on this links (in french):

- Introduction to Ergo Jr and Snap! :
<https://www.poppy-education.org/activites/initiation-ergo-jr-et-snap>
- Ergo Jr and Python tutorials :
<https://www.poppy-education.org/activites/tuto-python-robot-ergojr>
- High-school levels :
www.poppy-education.org/activites/activites-lycee
- Middle-school level :
www.poppy-education.org/activites/activites-college
- Primary Schools level :
<https://www.poppy-education.org/activites/activites-primaire/>
- Demonstrations (just videos to show the possibilities) :
<https://www.poppy-education.org/activites/demos/>
- We continued to improve the documentation of the robotic platform Poppy (<https://docs.poppy-project.org/en/>) and the documentation has been translated into French (<https://docs.poppy-project.org/fr/>).
- A FAQ have been written with the most frequents questions to help users: <https://www.poppy-education.org/aide/>

10.3.7. Innovation and transfer

- Since 1 september 2017 until february 2019, PerPoppy and Poppy Station Projects : D. Roy, P.-Y. Oudeyer. These projects aim to perpetuate the Poppy robot ecosystem by creating an external structure from outside Inria, with various partners. After the Poppy Robot Project, the Poppy Education Project is ending and Inria doesn't

Many exchanges have already taken place with potential partners such as the EPFL, the ENSAM network, the «Ligue de l'Enseignement», Génération Robots, the French Institute of Education, several academies, the direction of digital education of the Ministry of Education, ... PerPoppy is the project which is building the new structure, and Poppy Station is the name of the new structure. Poppy Station, which will include Poppy robot ecosystem (hardware, software, community) from the beginning, will be a place of excellence to build future educational robots and to design pedagogical activities to teach computer science, robotics and Artificial Intelligence.

MANAO Project-Team

10.3. Popularization

We took part in "FACTS", the art and science festival of Université de Bordeaux, and more precisely in the exhibition "Open Lab", which took place from November 14 to 21 at Espace 29. In collaboration with the artist Maud Mulliez, we presented our ongoing work, "L'empreinte du Geste", which aims at analyzing the connection between the gesture of the artist and the mark that the brush or pen produces on the final art piece. An installation combining videos and projection was allowing the audience to discover our preliminary results.

Pierre Bénard gave a talk titled *L'art et la science des films d'animation 3D* during the internal Inria BSO seminar "Unithé ou café" in January 2017 (45 minutes + questions) and in front of secondary students (120 split into 5 groups) during "la Fête de la Science" (30 minutes) in September 2017. This talk presents the main steps and ingredients required to create a 3D animated film (3D modeling, animation, lighting, rendering) and, for each of them, it shows the subtle but indispensable mix of physical and mathematical models, computer algorithms and artistic talent that it implies. It also highlights how the work of manao contributes to this field.

POTIOC Project-Team

10.3. Popularization

Duties

- Member of the Editorial board of Blog Binaire - Le Monde, Pascal Guitton

Teaching and Education

- Participation à la création du MOOC Informatique et Création Numérique, Plate-forme FUN, Anke Brock & Pascal Guitton, <https://www.fun-mooc.fr/courses/inria/41014/session01/about>

Talks and Hands-on

- Collaborer avec la réalité virtuelle, Pint of Sciences, Bordeaux, May 14th, Damien Clergeaud
- Demonstration of VISTE project at Colloque Robotique et Éducation 2017, Bordeaux, July 2017, Anke Brock & Jérémy Albouys
- Demonstration and presentation of VISTE project at Fête de la science, Oct 2017, Jérémy Albouys
- Demonstration and presentation of VISTE project at Nuits des chercheurs at Cap Sciences, Oct. 2017, Jérémy Albouys
- Collaborative Interaction in Virtual Reality, Airbus PhD's Days, Saint Médard en Jalles, Nov. 8th, Damien Clergeaud
- La Table de Shanghai, Open Lab FACTS Festival, Nov. 14-25th
- Organization of an Hackathon on Cognitive Science and Artificial Intelligence at Bordeaux, Dec 9-10th, Philippe Giraudeau
- Interview, Martin Hachet, Inriality, <https://www.inriality.fr/culture-loisirs/se-divertir-en-2067/>
- Interview, Martin Hachet, RFI - autour de la question, <http://www.rfi.fr/emission/20171113-comment-imaginer-notre-futur>
- Interview, Martin Hachet, Libération, http://next.liberation.fr/musique/2017/01/27/un-nouveau-chant-de-vision_1544507

Popularizing inside Inria

- Comment favoriser l'accessibilité numérique, Unithé ou Café, Bordeaux, April 6th, Pascal Guitton
- Teegi, 50th anniversary Inria, Nov 7-8, Paris, Philippe Giraudeau, Martin Hachet

Written, Oral or Video Content

- "Fabien Lotte about his goal to improve BCI usability", g.tec medical engineering blog, <http://blog.gtec.at/interview-fabien-lotte/>, 2017
- Interview about VISTE project for LUDOVIAMAGAZINE : <https://www.youtube.com/watch?v=Hdw5O0myifY>, Anke Brock