50 YEARS OF PROLOG

The Prolog Day Symposium
November 10, 2022
Faculté de Médecine
Université Paris Cité
45 rue des Saints -Pères - 75006 PARIS

Prolog HERITAGE
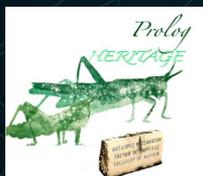
Artificial Intelligence
www.elsevier.com/locate/artint

Association for Logic Programming

PRESENTATION

01

50 years of Prolog

In the summer of 1972, Alain Colmerauer and his team in Marseille developed and implemented the first version of the logic programming language Prolog. Together with both earlier and later collaborations with Robert Kowalski and his colleagues in Edinburgh, this work laid the practical and theoretical foundations for the Prolog and logic programming of today. Prolog and its related technologies soon became key tools of symbolic programming and Artificial Intelligence.

The Year of Prolog celebrates the 50th anniversary of these events and highlights the continuing significance of Prolog and Logic Programming both for symbolic, explainable AI, and for computing more generally. It also aims to inspire a new generation of students, by introducing them to a more human-friendly, logic-based approach to computing.

The idea of celebrating the Year of Prolog consolidated during the commemoration of Alain Colmerauer's work, held in October 2021 in Marseille. It had been initiated earlier by Célestin Sedogbo and Jean Rohmer, then rapidly relayed by Colette Colmerauer and Guy-Alain Narboni, who had the vision as soon as 2009 to create the Prolog Heritage Association. It became an international event under the auspices of the Association for Logic Programming (ALP) and overseen by an International Scientific Committee chaired by Robert Kowalski, and including the current president and several past ALP presidents. A local arrangements committee, chaired by Jean Rohmer, oversees the planning and execution of Year of Prolog events. The Scientific Committee appointed the Jury chaired by Francesca Rossi for awarding the Alain Colmerauer Prize. A Coordination Board, chaired by Célestin Sedogbo coordinates the activities of the Year of Prolog.

The activities of the Year of Prolog include:
- The inaugural edition of the ALP Alain Colmerauer Prolog Heritage Prize (in short: the Alain Colmerauer Prize) for recent practical accomplishments that highlight the benefits of Prolog-inspired computing for the future.
- The Prolog Day Symposium, on November 10, 2022 in Paris, in which the Alain Colmerauer Prize will be awarded. Subsequent editions of the prize will be awarded at the corresponding year's International Conference on Logic Programming.
- The "Prolog and Education" initiative, which intends to introduce schoolchildren to logic, programming, and AI and also map and provide Prolog education resources for educators. This is a long-term initiative which will be continued in future years.
- A survey paper on Fifty Years of Prolog and Beyond has been written, and published in the 20th anniversary special issue of the ALP journal Theory and Practice of Logic Programming (CUP).
- There have been also further activities such as special sessions and invited talks at other events and conferences.

Sponsors : The Year of Prolog and its activities, including the Alain Colmerauer Prize, are sponsored by the Association of Logic Programming, the Prolog Heritage Association, the AI Journal, Institut Carnot Cognition, Institut Fredrik Bull, AFIA (Association Française d'Intelligence Artificielle), Université Léonard Vinci, INRIA, Cosytech, SFI (Société Française d'Informatique).

2022 Year of Prolog

PROGRAM 02

50 years of Prolog

Program

Welcome and ringmaster of the morning: Jean Rohmer

- **09H00-09H15:** Opening Addresses

- **09H15-10H45** Session 1 | **What is Prolog and why is it important?** Chair - Robert Kowalski
  - ✓ *50 years of Prolog and Beyond. Manuel Hermenegildo.*
  - ✓ *Round table including Stefania Costantini, Randy Goebel, Gopal Gupta, Michael Genesereth, Manuel Hermenegildo, Jean Rohmer, and David S. Warren.*

  - ✓ **10H45-11H15 : Break**

- **11H15-12H45:** Session 2 | **Prolog thinking and education.** Chair - Veronica Dahl
  - ✓ *Prolog's Educational Potential. Verónica Dahl.*
  - ✓ *Rountable including Laura Cecchi, José Francisco Morales, Asya Stoyanova-Doycheva, and Robert Kowalski.*

- **12H45-14H15 : Lunch**

- *Welcome and ringmaster of the afternoon: Célestin Sedogbo*

- **14H15-14H45:** Alain Colmerauer and the Prolog adventure (film)
- **14H45-15H00:** On stage: several generations of Prolog Champions

- **15H00-16H00:** Session 3 | **Prolog-powered applications** – Chairs: Laurent Gouzènes and Annie Liu
  - ✓ *2022 Survey of Applications. Laurent Gouzènes.*
  - ✓ *Round table (Chair David S. Warren) including Mats Carlsson, Laurent Cervoni, John Gallagher, Laurent Gouzènes, Benjamin Grosof, Clive Spenser, and Jan Wielemaker.*

- **16H00-18H15:** Session 4 | **Alain Colmerauer Prize.** Chair - Francesca Rossi
- **16H00-16H40 :** Presentations by finalists
  - ✓ *ProB: Harnessing the Power of Prolog to Bring Formal Models and Mathematic to Life. Michael Leuschel.*
  - ✓ *Logic Model Processing. Pierre Dissaux.*
- **16H40-17H00 : Break**
- **17H00-18H00 :** Presentations by finalists
  - ✓ *Symbium: The Computational Law Company. Michael Genesereth, Abhijeet Mohapatra, and Leila Banijamali.*
  - ✓ *PROLEG: Practical Legal Reasoning System. Ken Satoh.*
  - ✓ *Pacioli: a PROLOG system for financial report validation. Miguel Calejo and Charles Hoffman*
- **18H00-18H15 :** Announcement of the prize winner and prize ceremony

- **18H15-18H20 :** Launching of the "Future of Prolog Initiative" (Thomas EITER)
- **18H20-18H30 :** Closing Ceremony
- **18H30-20H00 : Cocktail**

- **14H00 - 16H30 :** A live initiation to Prolog will be given by high-school students from Lycée Paul Valéry, Paris (aged 18) to younger ones (aged 14) from Collège Lamartine, Paris, in a classroom next to the symposium amphitheater, under the supervision of Laure Bourgois. The students from the Lycée will have been trained beforehand during 8 hours in their high school.

BIOS 03

50 years of Prolog

LAURE BOURGOIS

Laure Bourgois holds a PHD in Computer Science from Paris-Nord University (2007) and is an expert in symbolic AI and numerical simulations. Among other things, she was an R&D engineer at France Telecom R&D, research officer at IFSTTAR (French institute of science and technology for transport).
In 2017 she created Codataschool (certified training organization in AI and Big Data). With her network of 20 trainers Doctors in IT specialized in AI, she implemented her vision: : being ahead on the way of transmitting knowledge and AI. Her goal is to unite AI specialists towards a training that favors creativity and ethics.

LAURA CECCHI

PhD in Computer Science, Universidad Nacional del Sur, Argentina
My research interests are related to Programming Logic, Computational Logic, Ontologies, Computational Complexity and Computer Science Education.
I have led the Grupo de Investigación en Lenguajes e Inteligencia Artificial, Universidad Nacional del Comahue and several scientific projects related to Artificial Intelligence, Semantic Technologies and methodologies and applications for Computer Science Education. I have also coordinated numerous extension projects developed in collaboration with High Schools at Neuquén to teach Computer Science to young people.
I have participated as a PC member in national conferences and have published more than 50 articles in journals and conference proceedings. I supervise PhD and Master students in my research area.

MATS CARLSSON

Ph.D. in Computer Science, Royal Institute of Technology, Stockholm, 1990. Associate Professor (Docent), Uppsala University, 2009. Current affiliation: RISE Research Institutes Sweden.

Mats is the designer and main implementer of SICStus Prolog and its finite domain constraint solver. His main research interests is constraint programming. He has experience of applications of constraint and MIP programming in areas including frequency planning, steel-mill scheduling, firmware optimization, gene expression analysis, DNA sequence analysis, packing, combinatorial auctions, code generation, sports scheduling, and product configuration.

STEFANIA COSTANTINI

From 2005, Full Professor at the DISIM Department, University of L'Aquila. Research fields: Logic Programming and Artificial Intelligence (AI). Head of Research Group AAAI@AQ (Artificial Agents and Artificial Intelligence). (Co-)Author of more than 150 international publications indexed by Scopus. Member of the Program Committee of the most important conferences in her research fields, Co-Chair of ICLP 2023, General Chair of PAAMS 2020 and PAASMS 2022, member of the Editorial Board of the journal "Theory and Practice of Logic Programming". President of GULP (Italian Association of Computational Logic). Member of the Executive Committee of ALP (Association for Logic Programming). Member of the Steering Committee of AIxIA (Italian Association of Artificial Intelligence).

VERONICA DAHL

Verónica Dahl is an Argentine/Canadian mother, computer scientist, musician and writer, recognised by ALP as co-founder of the Logic Programming field. She is an NSERC researcher and a Professor Emeritus at SFU.

Her work in cognitive sciences, computational linguistics, deductive knowledge bases, computational molecular biology and web-based virtual worlds won her awards such as the Calouste Gulbenkian Award for Science and Technology and the European Commission's Marie Curie Chair of Excellence. Her literary work on Creative Non-Fiction won her three first prizes.

She has served as ALP's President, SFU's Cognitive Sciences Program Chair, Member of NSERC's Grant and of the Killam Prize Selection Committees, and Compulog Net/ Compulog Americas Coordinator.
Her present research aims at alleviating language extinction through grammar induction and on computationally aiding Doughnut Economics projects, towards a world no longer organized around domination, but around solidarity and equitable sharing.

John Gallagher

John Gallagher is professor emeritus at Roskilde University, Denmark. He studied mathematics, philosophy and computer science at Trinity College Dublin, Ireland where he received his Ph.D. degree with a thesis on logic program specialisation in 1983. After postdoc positions at the Weizmann Institute of Science in Israel and the Katholieke Universiteit Leuven in Belgium and two years as a researcher in a German software company in Hamburg, he became an associate professor of computer science at the University of Bristol in the UK in 1990. In 2000-2001 he was a visiting professor at the Universidad Politécnica de Madrid in Spain. In 2002, he moved to Denmark following his appointment as professor of computer science at Roskilde University. Since 2008 he was also a part-time research professor at the IMDEA Software Institute in Madrid. His research interests focus on program transformation and generation, program analysis, constraint logic programming, rewrite systems, temporal logics, semantics-based emulation of languages and systems, and verification using abstraction and he has participated in a number of national and European research projects on these topics.

MICHAEL GENESERETH

Michael Genesereth is a professor in the Computer Science Department at Stanford University and a professor by courtesy in the Stanford Law School. He received his Sc.B. in Physics from M.I.T. and his Ph.D. in Applied Mathematics from Harvard University. Genesereth is most known for his work on Computational Logic and applications of that work in Enterprise Management, Computational Law, and General Game Playing. He is one of the founders of Teknowledge, CommerceNet, and Mergent Systems. Genesereth is the director of the Logic Group at Stanford and the founder and research director of CodeX - the Stanford Center for Legal Informatics.

RANDY GOEBEL

R.G. (Randy) Goebel is currently professor of Computing Science in the Department of Computing Science at the University of Alberta and Fellow and co-founder of the Alberta Machine Intelligence Institute (Amii). He has held previous appointments at University of Tokyo, Hokkaido University, National Institute of Informatics (Tokyo), and Multi-Media University (Kuala Lumpur)

Professor Goebel's theoretical work on abduction, hypothetical reasoning and belief revision is internationally well known; his recent research is focused on the formalization of visualization and explainable artificial intelligence (XAI), especially in applications in autonomous driving, legal reasoning, and precision health. He has worked on optimization, algorithm complexity, systems biology, natural language processing, and automated reasoning.

LAURENT GOUZENES

Laurent Gouzenes graduated as an engineer from Ecole Polytechnique in Palaiseau and PhD in Automatic Control from the University of Toulouse. He worked as a public researcher at the CNRS and ONERA (Aerospace), on trajectory control and vision for robots, a mixed Lisp and Prolog compiler and programming environment, and expert systems. He then managed an AI company as CTO during 4 years. After a long industrial experience at STMicroelectronics (18 years) as head of European RD and Public Affairs, he came back to AI in 2011 with an original approach embedded in the KM2 project, with defines a new approach of knowledge management for document and program generation based on trees and graphs. Laurent was also head of the national Research Network for Nanotechnologies and Nanosciences, and scientific adviser to the french Parliament during 9 years.

BENJAMIN GROSOF

Benjamin Grosof, PhD, is Co-Founder, Chief Scientist and Evangelist at Coherent Knowledge, an AI startup that provides highly explainable decision support via query answering, and is the maker of the open-source tool ErgoAI for highly meta expressive, yet scalable, logic programming.

In an AI research career spanning nearly 4 decades, he has pioneered technology invention and industry standards for knowledge graphs and expressively flexible semantic rules, their acquisition from natural language, how to combine them with machine learning, and a wide variety of applications in defense, legal, financial, biomedical, and e-commerce. Previously he was: a technical exec for Paul Allen, Accenture, and Kyndi; MIT Sloan professor; DARPA PI; and IBM Research scientist.

His background includes a Stanford PhD in AI, Harvard BA, 60+ refereed publications, 10,000+ citations, 2 W3C standards, and 5 major industry software products.

GOPAL GUPTA

Gopal Gupta is a Professor of Computer Science at the University of Texas at Dallas and co-director of its Center for Applied AI and Machine Learning. He has worked in the field of logic programming since 1987. His current research is focused on developing goal-directed implementations of Answer Set Programming (ASP) to automate commonsense reasoning with the goal of achieving advanced general intelligence (AGI). In the past he has worked on parallel logic programming and applying Prolog to software engineering and formal methods. His research group has published extensively in the area of logic programming and has also authored many logic programming-based software systems, several of which are publicly available. His group has also developed logic programming-based explainable/interpretable AI systems. His research work has also resulted in Prolog-based commercial software systems that have formed the basis of two start-up companies. In 2016, his group won the ICLP 10-year test-of-time award. Recently his group was selected to compete in the 4th Amazon Alexa Prize Socialbot Challenge for 2020-2021.

MANUEL HERMENEGILDO

Manuel has been developing Prolog technology since 1983, during his PhD at UT Austin. He led the development of the parallel &-Prolog system and, through its successor, Ciao Prolog, has continued to work with his research group towards augmenting the power of the language via extensions such as assertions (for modes, types, determinacy, etc.); various search rules; functions; higher order; lazy evaluation; objects, etc., as well as other aspects such as high-performance and robustness, or improved development environments, with verification or partial evaluation. He has also applied Prolog to the analysis and verification of other languages, from machine code to smart contracts, for both functional and non-functional properties, including energy consumption. He has more than 250 publications and given numerous invited talks on this work, and received a number of awards, including an ICLP test-of-time award. He has also taught Prolog for over 35 years at UT Austin, U. of New Mexico, and the T.U. of Madrid (UPM). He is Distinguished Prof. at MDEA Software and Full Prof. at UPM, and has also served as President of the ALP. (More info.)

ROBERT KOWALSKI

Robert Kowalski is Emeritus Professor at Imperial College London. His research is concerned both with developing human-oriented models of computing and computational models of human thinking. His early work in the field of automated theorem-proving contributed to the development of logic programming in the early 1970s. His later research has focused on the use of logic programming for knowledge representation and problem solving. It includes work on the event calculus, legal reasoning, abductive reasoning and argumentation.

Kowalski received the IJCAI award for Research Excellence in 2011 and the JSPS Award for Eminent Scientists in 2012. He co-shared with Fariba Sadri and Marek Sergot the Inaugural Codex Prize in 2022 for their work in the 1980s on the implementation and logical analysis of the British Nationality Act in Prolog.

ANNIE LIU

Annie Liu is a Professor of Computer Science at Stony Brook University. She received her Ph.D. and M.S. from Cornell University, M.Eng. from Tsinghua University, and B.S. from Peking University, all in Computer Science. Her interests are in Languages, Algorithms, Program Design and Optimizations, Program Analysis and Transformations, Intelligent Systems, Distributed Systems, and Security. Annie Liu's Design and Analysis Research Laboratory has projects in modeling and specification, analysis and verification, design and optimization, code generation, and testing. These projects are for optimizing compilers, interactive environments, real-time and embedded systems, database systems, semantic Web, distributed systems, big data analysis, security, and more. Annie Liu is a recipient of the Best Student Paper Award, 14th International Symposium on Stabilization, Safety, and Security of Distributed Systems, and the State University of New York Chancellor's Award for Excellence in Scholarship & Creative Activities.

JOSE MORALES

Jose F. Morales is Assistant Professor at the Technical U. of Madrid (UPM) and Researcher at the IMDEA Software Institute, in Madrid, Spain. His main research interests are in logic programming, static analysis, and abstract machines. He is the author of more than 60 technical papers. He has served as program chair and program committee member of numerous conferences in his research areas, including the International Conference of Logic Programming (ICLP). He is currently a member of the Executive Committee of the Association for Logic Programming (ALP). He is one of the main contributors to the Ciao Prolog system.

JEAN ROHMER

After academic research at Grenoble University and INRIA Paris, Jean Rohmer discovered Prolog in 1981, which motivated him to create an AI activity (research, products, services) inside the Groupe Bull, the main european computer manufacturer -48000 employees- at that time. As AI Vice-President, he managed a worldwide business unit of 200 persons, which developed some of the most significant symbolic AI applications on all continents. This team developed Prolog implementations on PC, Unix and mainframes, and released in 1989 the first ever industrial constraint programming tool: "Charme". As a researcher, he opened the Datalog era, with the "Alexander Method" (1985), which was the first enunciation and implementation of an algorithm to run efficiently logic recursive rules on large relational databases. Among other activities, he developed tools for Military Intelligence, both in his own company, Ideliance, and for Thales Group.

FRANCESCA ROSSI

Francesca Rossi is an IBM fellow and the IBM AI Ethics Global Leader and the current AAAI President. Her research interests focus on artificial intelligence, specifically they include constraint reasoning, preferences, multi-agent systems, computational social choice, and collective decision making. She is also interested in ethical issues in the development and behaviour of AI systems, in particular for decision support systems for group decision making. She has published over 200 scientific articles in journals and conference proceedings, and as book chapters. She has co-authored a book and she has edited 17 volumes, between conference proceedings, collections of contributions, special issues of journals, and a handbook. She is a fellow of both AAAI and EurAI. She has been president of IJCAI, executive councillor of AAAI, and Editor in Chief of the Journal of AI Research. She is a member of the scientific advisory board of the Future of Life Institute (Cambridge, USA) and a deputy director of the Leverhulme Centre for the Future of Intelligence (Cambridge, UK). She is in the executive committee of the IEEE global initiative on ethical considerations on the development of autonomous and intelligent systems and she is a member of the board of directors of the Partnership on AI, where she represents IBM as one of the founding partners. She has been a member of the European Commission High Level Expert Group on AI and the general chair of the AAAI 2020 conference. She is a member of the Responsible AI working group of the Global Partnership on AI and the industry representative in its Steering Committee.

CELESTIN SEDOGBO

Celestin Sedogbo obtained a Master's degree in theoretical computer science in 1981 from the University of Paris-Saclay, a PhD in computer science in 1983 from the University Paris-Saclay, a Sc.D. in 1987 from the Aix-Marseille Uiversity under the supervision of Alain Colmerauer. Célestin Sedogbo successively held the positions of Research Engineer (1982-1988) in automatic natural language processing & logic programming, Technical Director (1988-1994) in artificial intelligence at the Bull Group, and Professor (1994-1997), Louis Leprince-Ringuet Chair at the IMT Atlantique, Director of the Cognitive Systems Research Department (1997-2007) at Thales Research and Technologies. Since 2009, at the avionics division of Thales, he is in charge of regional scientific and technological cooperation; and in parallel he was holder of the regional industrial chair "Technical Systems for Human Enhancement" at ENSC - Bordeaux INP (2012-2019), and since 2017, he is director of the Institut Carnot Cognition (22 research units, 1800 research staff).

ASYA STOYANOVA-DOYCHEVA

Asya Stoyanova-Doycheva is an associate professor in the Department of Computer Systems, Faculty of Mathematics and Informatics, University of Plovdiv, Bulgaria.
Her PhD thesis is in the field of software engineering.
Her main research interests include software engineering, semantic modeling (ontology engineering), and artificial intelligence.
In recent years, she has worked on projects in the fields of e-learning, cultural and historical heritage, and smart agriculture.

DAVID SCOTT WARREN

David Scott Warren is Professor Emeritus at Stony Brook University. His entire research career has been in the area of Logic Programming, including theory, systems, and applications. He is an author of more than 100 technical papers in the area and has served as President of the Association for Logic Programming. He is the leader of the XSB project that has developed and supported the open source XSB Tabled Prolog system, which has been the leading tabled Logic Programming system for the last 30 years. He is a Fellow of the ACM and co-founder of XSB, Inc., a 25-year-old software company that commercializes applications supported by the XSB Prolog system.

JAN WIELEMAKER

Jan Wielemaker is the lead developer of SWI-Prolog and currently director of SWI-Prolog Solutions b.v. He started SWI-Prolog in 1987. After successful use in the KADS European research project it was released as open source and became popular in education: it was small, free and user friendly. The system was further developed in the context of research projects at the University of Amsterdam, Vrije Universiteit Amsterdam and the CWI research institute in Amsterdam. Currently there is an active community of academic, commercial and amateur developers and users that move the project forwards.

LAURENT CERVONI

Director Research and Innovation
Talan
France

MARCUS TRISKA

Metalevel
Austria

CLIVE SPENSER

VisiRule
United Kingdom

SPONSORS

04

50 years of Prolog

INSTITUT CARNOT COGNITION

Created in 2016 and awarded the Carnot label in 2020, the Cognition Institute is unique in Europe, designed to develop and promote research partnerships and technology transfer among its 22 laboratories and the socio-economic world in the field of cognitive sciences.

The development of contractual research in this broad thematic field, which is often unknown to companies, is supported by the Carnot Cognition Institute, whose main mission is this. Indeed, the Institute has the capacity to identify the strategic interest that research in cognition can represent for companies. It then facilitates contacts and contracts with its laboratories by providing companies with a skills portal that enables them to better consider human capacities in the development of innovative technologies and services, to increase their innovation potential and their competitiveness. Coordinated by the CNRS, the Carnot Cognition Institute brings together 22 research units spread across France (SCALAB, Lille; LISN, Orsay and Paris- Saclay; CHArt, IJN, LSP, LSCP, ENSAD-Lab, Paris ; Center BORELLI, Paris Saclay; LaPEA, Boulogne Billancourt; COSTECH, Compiègne; LEAD, Dijon; Gipsa-Lab, LIG, LPNC, Grenoble; IMS, Bordeaux; CeRCA, Poitiers; IRIT, CRCA, Toulouse; LIA, Avignon; LPC, LPL, LNC, Aix-Marseille).

The thematic field of cognition covers all cognitive functions, human and animal, natural and artificial, such as perception, attention, language, memory, intelligence, reasoning, learning, emotions, human/machine interactions, etc. This gives the Carnot Cognition Institute a strategic advantage because of its status as a national consortium that allows all laboratories to be questioned in a single process, in an interdisciplinary approach. For a better readability of the socio-economic world, the scientific strategy of the Institute is declined in four scientific axes:

« Cognitive enhancement technologies », « Cognitive behavioural assessments », « Collective cognition » and « Cognition and language » answer the technological and societal stakes of tomorrow's world. AI is transverse to these four axes.

Artificial intelligence in its cognitive dimension aims precisely at compensating for the shortcomings of « modern » AI approch: the lack of data through general reasoning rules integrating various results from cognitive sciences (analysis of language, emotions, intuitive reasoning, mechanisms of analysis of complex scenes, decision under stress, influences of others on ourselves, etc.), but also the study (in the field of computational neurosciences) of types of spike-based networks, biologically more credible (calculating and learning faster, while requiring less data).), but also the study (in the field of computational neuroscience) of types of spike-based networks, biologically more credible (computing and learning faster, while requiring less data and consuming less energy); the lack of explicability of learning-based models through the development of hybrid models mixing learning and reasoning, or even models using reasoning in order to be able to justify the results of learning-based reasoning. A "cognitive" artificial intelligence puts back in its body of doctrine the fundamental alliance between computer science, human sciences and life sciences. It is irrigated by an essential experimental approach by questioning human intelligence and its sensory, motor, linguistic and social capacities. In return, it irrigates the human and social sciences and the life sciences by providing them with models and tools essential to their development. Such vision is the one driving the Institut Carnot Cognition, and that promotes the Institute.
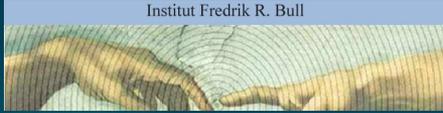
INSTITUT FREDRIK ROSING BULL

A highly talented Norwegian engineer, born in Oslo in 1882, Fredrik Rosing Bull was, from 1919, one of the pioneers of technological independence in Europe.

He died in 1925, six years before the industrial company that bears his name was created, after his invention of novel punched cards machines. The Fredrik R. Bull Institute, created in 1977 under the name of the Fredrik R. Bull Foundation, is an association (governed by the law of 1901), which has set itself the objective of studying the economic, social and human consequences the generalized use of "new techniques", a term which groups together all the techniques innervated by digital technologies.

The Institute brings together active members by cooptation, including high-level decision-makers, most of them have a wealth of experience acquired by exercising broad responsibilities in all sectors of national activity.

Reflecting together on the major problems posed to those responsible by this irruption of "advanced" techniques in all areas of life (particularly professional), these people base their thinking on a rigorous knowledge of the scientific and technical bases. Thus relying on solid foundations, their thinking tackles the consequences of the use of techniques, but not the techniques themselves.

Some prestigious past presidents of Institut Fredrik Rosing Bull:

Simone Rozes:

From 1996 to 2001, Simone ROZES, the first woman to become the first honorary president of the Court of Cassation, also became the first woman president of the Fredrik R. Bull Institute, which she gave to benefit from her experience. She was also Advocate General at the Court of Justice of the European Communities.

Louis Leprince-Ringuet:

From 1982 to 1996, Louis LEPRINCE-RINGUET, honorary professor at the Collège de France and at the Ecole polytechnique, assumed the presidency. This time it was the French Academy and the Academy of Sciences that brought together the Fredrik R. Bull Institute. From 1978, he was involved in all the activities of the Institute, giving it access to many companies. He found there a certain interest and pleasure.

Raymond Aron:

In 1978, Raymond ARON, honorary professor at the College de France, member of the Academy of Moral and Political Sciences, great French philosopher and journalist, author of a fruitful historical and political work, took the presidency of the Institute to which he provided the guarantee of its notoriety. He participated actively until his death in the work of the Institute.

IFB activities are currently supported by several Thinking Groups:

IVS: "Immaterial, Virtual and Society",
HIA: "Humanity and Artificial Intelligence",
SOS: "Complexity of Systems of Systems",
IDEE: "Innovation, Sustainability and Long-life Learning".

Groups meet regularly around an invited speaker, then continue discussion with a cocktail. Among recent invited invited speakers, we can mention Jean-Gabriel Ganascia, Philosopher and Professor of Computer Science at Sorbonne Université, at the occasion of the release of his latest book "Servitudes Virtuelles", an uncompromising criticism of some AI ethics approaches.

IFRB has organized more than 500 such meetings, which are listed in its website, where you can discover the Institute and apply for membership: https://institutbull.fr/

Ideally situated in the heart of La Défense business district, the Pôle Universitaire Léonard de Vinci counts more than 9500 students within its schools which deliver degrees recognized by employers: the Graduate School of Engineering (ESILV), the Management School (EMLV), the Institute of Internet & Multimedia (IIM).

The Pôle Léonard de Vinci was set up in 1995 through an initiative of the local council, the Conseil Général des Hauts-de-Seine. At its conception, it aimed at completely innovating French higher education. The goal was to assure socially inclusive access to public universities all while guaranteeing professional entrance to the best "Grandes Ecoles" (France's unique third level schools).

Since its creation, The Léonard de Vinci Group has continually striven for excellence in education and aims at exposing its young professionals to cultural diversity in an increasingly globalized world. The Léonard de Vinci Group encourages interdisciplinary collaboration between departments and is based around the values of multiculturalism, innovation, and good sportsmanship.

Three schools, one research center
ESILV (Léonard de Vinci Graduate School of Engineering) is structured around digital sciences and technology and is divided into four major specialisations that include computer science, computational mechanics, finance, and energy. With small class sizes encouraging close peer-to-peer interaction, team projects, and international internships and opportunities, students receive a comprehensive, well-rounded education. ESILV is a member of the CGE, the UGEI, the CDEFI, and Campus France.

ESILV awards graduates the degree of "Diplôme d'Ingénieur" accredited by the "Commission des titres d'ingénieur (CTI)" which is the French accreditation body for engineering programmes and institutins. ESILV has the EURACE Master label. **Léonard de Vinci Business School (EMLV)** offers several degrees with specialisations in accounting, digital business, marketing, finance, and human resources.

The EMLV programmes have been designed to help students reach their highest potential as future leaders. It is accredited by EFMD Master et AACSB. EMLV provides state of the art programmes in business with an emphasis on diversity and entrepreneurship. Students are exposed to real life business scenarios which equip them with core professional skills. In addition, the numerous study-abroad opportunities provide a strong international aspect. The range of internships opens up many career options for the future. Faculty and staff consist of both international research professors and business professionals. **IIM (Institut de l'Internet et du Multimedia)** Although Web Design schools are plentiful, IIM understood the importance of the digital revolution long before the rest... With more than 2000 students, 7 nationally accredited degrees, a network of 300 professional consultants and 2000 graduates currently working, IIM remains the best school in this sector, and is constantly evolving. Following a post-High School preparatory year which allows students to acquire basic technical and creative knowledge, the students will then define their professional project by choosing a profession in which they will specialize and will work on various projects.

The De Vinci Research Center (DVRC) combines research capabilities from De Vinci Higher Education schools. The Research Center is made up of four groups of study – business, digital, finance and modelling. There is also a service dedicated to partnership research. Each group is made up of researchers from one or several schools.

INRIA
National Institute for Research in Digital Science and Technology

Nearly 215 project teams work at Inria in an agile and partnership-based environment. An agile environment due to the project team model that promotes scientific excellence, technological development and innovation. A partnership-based environment since 80% of Inria's research teams are joint teams with leading research universities and organizations.

Our scientists produce knowledge, develop technologies and focus on applications related to the major issues of our society as healthcare, transport, energy, communications, security and privacy protection, smart cities and the factory of the future, etc.

Algorithms and quantum computing
High Performance Computing
Digital education
Artificial intelligence
Internet of Things
Software
Modeling and simulation
Frugal digital
Robotics
Digital health
Data science
Digital security

At Inria, the major themes shaking up digital ecosystems come to life through the Institute's project teams and their research subjects, with the focus very much on multi-disciplinary exploration and versatility".

Human scale, independence, versatility, multiculturalism... these are just some of the qualities that characterise Inria's project teams today.

Replacing the human being at the centre of the laboratories and projects they give rise to, means promoting the values of exchange, listening and collective intelligence, which are vital to the successful conduct of projects of excellence. Through the flexible model of the project team, Inria promotes innovative research as from the start and guarantees close support to all its researchers.

With digital technology disrupting all established frameworks, in order to bring through ambitious scientific and entrepreneurial projects, Inria's responsibility is to create value on a large scale for society and for the economy; to raise France's profile and boost its attractiveness; and to increase the impact of research and innovation in the digital sector.

The institute is developing ambitious research partnerships with both major manufacturers and smaller companies, the majority of which are based either in France or elsewhere in Europe. These partnerships are pushing at the frontiers of research and helping to promote risk-taking.

Inria Startup Studio brings out entrepreneurial projects and supports the creation of digital Deeptech startups led by scientists.

COSYTEC

Planning and scheduling your resources is at the center of what we do. For over 25 years, COSYTEC has been supplying leading industries and service providers, with turnkey resource scheduling and optimization software to boost their productivity and performance.

In 2019, COSYTEC was integrated into CEGEDIM SRH, one of the French leaders of HRIS SaaS solutions. COSYTEC is the software editor of the following products:
-OPTI-CHANNEL: resources scheduling software package
-CHIP V5: Constraint Programming tool

COSYTEC provides also high performances optimization engines solutions, based on Constraint Programming technology, tailored to customer needs.

Among our customers:

AFIA

L'objet de l'AFIA, Association Loi 1901 sans but lucratif, est de promouvoir et de favoriser le développement de l'Intelligence Artificielle (IA) sous ses différentes formes, de regrouper et de faire croître la communauté française en IA, et, à la hauteur des forces de ses membres, d'en assurer la visibilité.

L'AFIA anime la communauté par l'organisation de grands rendez-vous. Se tient ainsi chaque été une semaine de l'IA, la « Plate-forme IA » (PFIA 2020 Angers, PFIA 2021 Bordeaux, PFIA 2022 Saint-Etienne) au sein de laquelle se tiennent les « Conférence Nationale d'Intelligence Artificielle » (CNIA), « Rencontres des Jeunes Chercheurs en IA » (RJCIA) et « Conférence sur les Applications Pratiques de l'IA » (APIA) ainsi que plusieurs conférences thématiques hébergées qui évoluent d'une année à l'autre, sans récurrence obligée.

L'AFIA assure :
· Le maintien d'un site web dédié à l'IA, reproduisant également les Brèves de l'IA,
· Une journée Industrielle, plus connue sous le nom « Forum Industriel en IA » (FIIA 2021),
· Une journée Recherche sur les « Perspectives et Défis en IA » (PDIA 2022),
· Une journée Enseignement intitulée « Enseignement et Formation en IA » (EFIA 2022),
· La remise annuelle d'un Prix de Thèse de Doctorat en IA,
· Le soutien à plusieurs Collèges, actuellement au nombre de huit, ayant leur propre activité déléguée :
      o Collège Industriel (depuis janvier 2016),
      o Collège Apprentissage Artificiel (depuis janvier 2020),
      o Collège Interaction avec l'Humain (depuis juillet 2020),
      o Collège Représentation et Raisonnement (depuis avril 2017),
      o Collège Science de l'Ingénierie des Connaissances (depuis avril 2016),
      o Collège Systèmes Multi-Agents et Agents Autonomes (depuis janvier 2017),
      o Collège Technologies du Langage Humain (depuis juillet 2019) ,
      o Collège Création d'Événements (depuis octobre 2018)

BRONZE SPONSOR
SIF

SIF (Société informatique de France) is the French learned society in "Informatique". The French word "Informatique" covers a complex reality, which encompasses but is not limited to ICT, Information Technology, Informatics and Computer Science. Created in 2012, SIF aims at gathering people sharing similar values to work towards the following goals:

- To promote "Informatique" as both a science and a technology and give elements to any citizen to grasp enough of it to be able to tackle some of the challenges of living in a very digital 21stcentury,
- To improve the informatics skills of all teachers from kindergarten to university and also increase the pool of well-formed specialists for teaching computer science,
- To be a heard voice of scientific responsibility and ethics before public authorities and actors of the socio-economic world,
- To provide spaces for members of the scientific community as well as to the citizens to debate and discuss the many challenges related to the development of "Informatique", its latest breakthroughs and the consequences of its spread at any level of our society.

SIF is involved in many different actions from the organization of pluri-annual thematic workshops and schools, and an annual congress, to the promotion of researchers through rewards, along with science popularization activities. SIF works hand in hand with many partners: French learned societies of other fields, international learned societies, academic institutions, associations, and French professional unions of companies. It is ruled by a board of 24 elected administrators, a scientific council and a council of associations.

OTHER PARTNER
LYCÉE PAUL VALERY PARIS

Located in the 12th arrondissement of Paris, the Paul Valéry high-school is a public institution that welcomes students from 6th grade to BAC + 2. As a future **« Campus of Excellence in Artificial Intelligence »,** the Paul Valéry high-school is positioned as an establishment of the future in the digital field.

Within the framework of this project, jointly led by Françoise Sturbaut, head of the school, the Ile-de-France region, the Paris rectorate and Sorbonne-University, the campus is already carrying out several actions:

- It raises public awareness of AI: through regular conferences and meetings with engineers-researchers on AI and its applications.
- It provides training in AI: by offering students training and workshops on AI and by mobilizing companies in the world of educational technologies.
- Later, it will disseminate AI solutions: by connecting European players in AI with companies in the Ile-de-France region and by offering them support.

The campus will take advantage of the contributions of AI in its design and operation with a "smart building" approach. It will have dedicated spaces to conduct collaborative projects and host its partners thanks to a research space, a project incubator, a training and coworking space, etc.

The Paul Valéry campus also has a Digital FabLab, a project built and piloted by Stéphane Pamphile since 2018, a professor of Physics-Chemistry and Computer Science. This unique place in Paris welcomes students throughout the week to offer them digital awareness activities through workshops, classes, Hackathons, projects, competitions and animations in robotics, programming, web design, artificial intelligence, IoT, design and 3D printing.

Links :
Academy link : https://www.ac-paris.fr/la-cite-scolaire-paul-valery-futur-campus-de-l-intelligence-artificielle-de-la-region-ile-de-france-122962
High-school link : https://pia.ac-paris.fr/serail/jcms/s1_942748/fr/accueil
FabLab link : http://fablab-pv.fr/ «
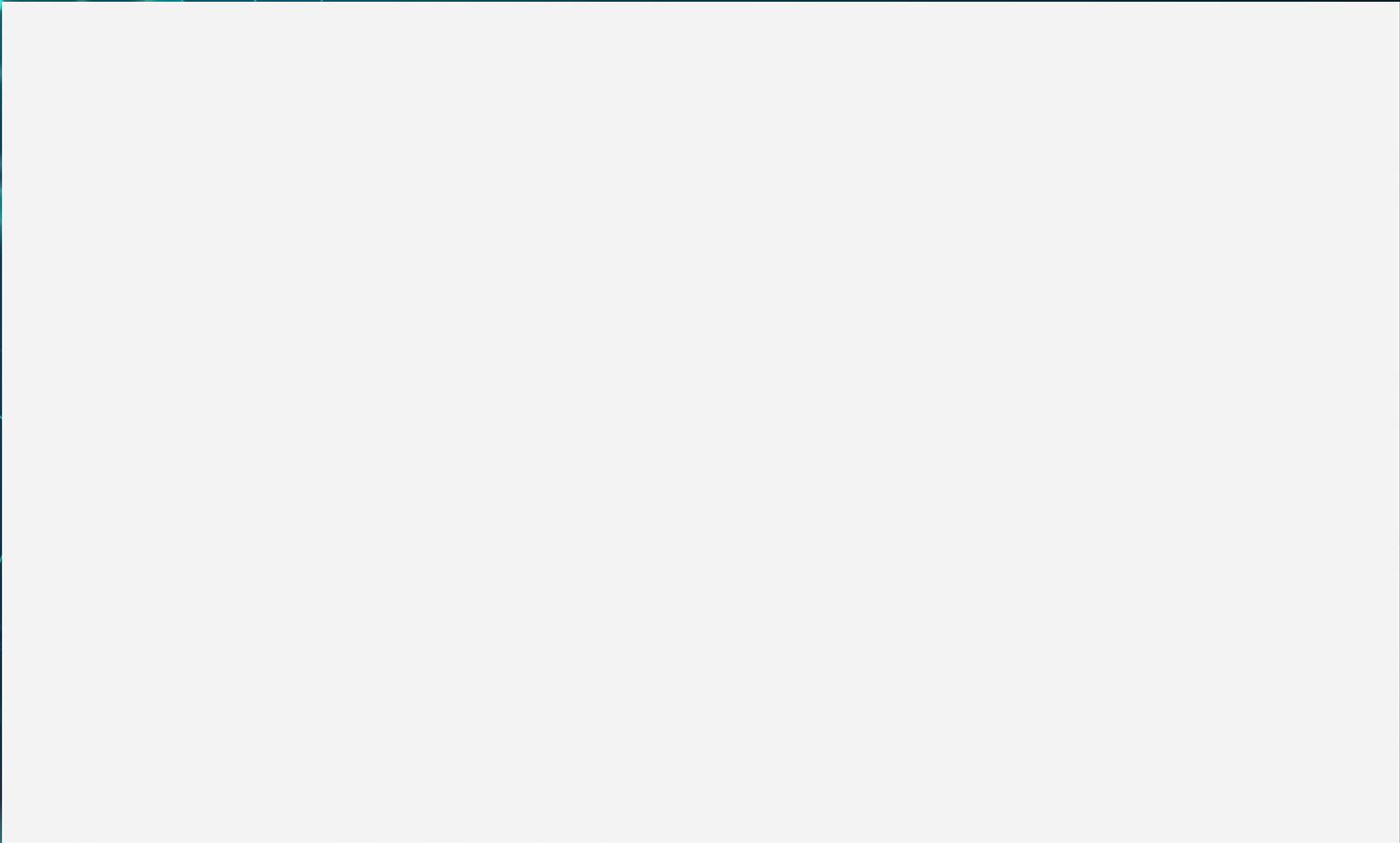
NOTES

NOTES
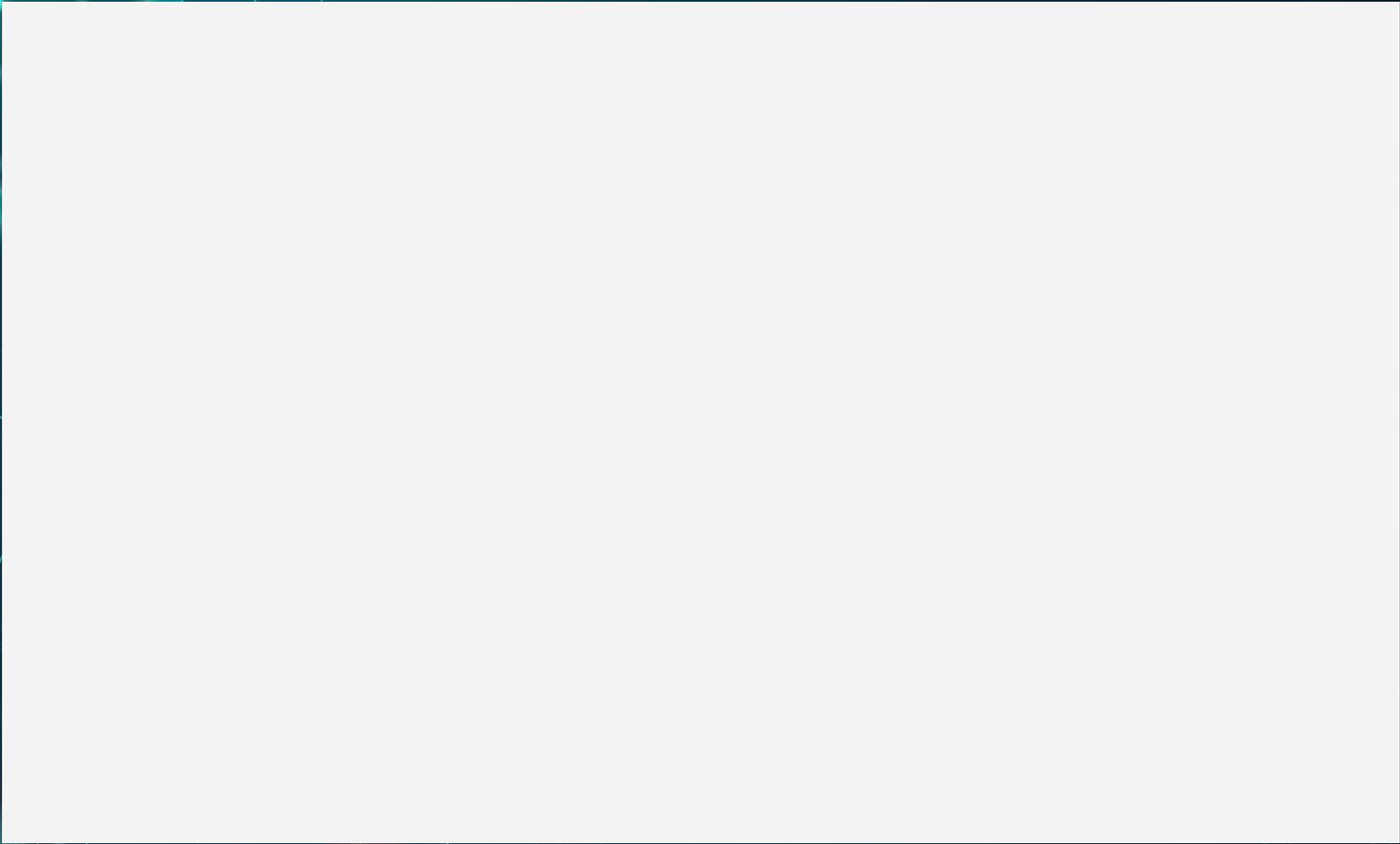
ALAIN COLMERAUER PRIZE JURY

- Francesca Rossi – Chair
- Gopal Gupta
- Manuel Hermenegildo
- Annie Liu
- Marie-Christine Rousset

HONORARY SCIENTIFIC COMMITTEE

Krzysztof	Apt
Maurice	Bruynooghe
Keith	Clark
Jacques	Cohen
Stefania	Costantini
Mehmet	Dincbas
Hervé	Gallaire
Maria	Garcia de la Banda
Michael	Genesereth
Seif	Haridi
Gerda	Janssens
Evelina	Lamma
Annie	Liu
Paola	Mello
Luis	Moniz Pereira
Fernando	Pereira
Enrico	Pontelli
Philippe	Roussel
Fariba	Sadri
Taisuke	Sato
Torsten	Schaub
Peter	Stuckey
Theresa	Swift
Peter	Szeredi
Paul	Tarau
Francesca	Toni
Pascal	Van Hentenryck
Jan	Wielemaker

SCIENTIFIC COMMITTEE

- Bob Kowalski – Chair
- Veronica Dahl
- Thomas Eiter
- Gopal Gupta
- Manuel Hermenegildo
- Jean Rohmer
- Francesca Rossi
- Marie-Christine Rousset
- Célestin Sedogbo
- David S. Warren

50 | 1972 / 2022

50e anniversaire de Prolog
Prolog **50**th anniversary

Local Arrangements Committee

- Marc Bergman
- Laure Bourgois
- Laurent Cervoni
- Colette Colmerauer
- Laurent Gouzenes
- Henry Kanoui
- Guy Alain Narboni
- Odile Papini
- Jean Rohmer
- Célestin Sedogbo

Alain COLMERAUER

50 Years of Prolog
The Prolog Day Symposium