

Research

IRIF is renown for its contributions to the design and analysis of algorithms, the study of computational and data representation models, the foundations of programming languages, software development, verification, and certification. IRIF also conducts interdisciplinary research taking advantage of its scientific approach.

IRIF relies on mathematical concepts developed and studied within it, particularly in combinatorics, graph theory, logic and algebra. Its work also contributes directly to mathematics, including number theory, combinatorial physics, probability theory, category, proof theory, and computer assisted mathematical proofs.



Academics

IRIF participates to several master programs in computer science and mathematics such as:





- ★ Parisian Master of Research in Computer Science, coordinated by Université de Paris in partnership with most of regional academic institutions. IRIF manages a dozen of courses and is associated to about twenty others.
- ★ Logique Mathématique et Fondements de l'Informatique, co-leded by IRIF and Institut de Mathématiques de Jussieu-Paris Rive Gauche.

IRIF has started and been running the French Spring Research School in Theoretical Computer Science since 1973, and also organizes three research schools per year.

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Access

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 Tramway T3a: Avenue de France
 Buses 62, 89: Porte de France

IRIF is a research unit co-founded by CNRS and Université de Paris, hosting two Inria project-teams. IRIF is also member of Fondation Sciences Mathématiques de Paris, and of three regional programs: Math Innov, Computer Sciences, Quantum Technologies.

IRIF
INSTITUT
DE RECHERCHE
EN INFORMATIQUE
FONDAMENTALE

The research conducted at IRIF is based on the study and understanding of the foundations of all computer science, in order to provide innovative solutions to the current and future challenges of digital sciences.

 www.irif.fr
 @IRIF_Paris




Numbers

 171 members / 90 tenures / 48 PhD students

- 50 faculty members
- 32 researchers
- 5 administrative staff, 3 technical staff
- 5 research associates, 10 emeritus members
- 18 postdocs and teaching assistants
- 48 PhD students

€ Annual budget of 2 M€ funding 40 projects

- Europe: 3 ERC, 1 H2020
- National: 23 ANR, 3 IUF
- Institutional: 10

 250 international publications per year

Honors

- ★ 6 laureates of European Research Council
- ★ 5 members of Institut Universitaire de France
- ★ 2 members of Academia Europæa, 1 EATCS fellow
- ★ 1 member of Académie des sciences
- ★ 1 grand prize Inria - Académie des sciences
- ★ 3 CNRS medals: 2 silver, 1 bronze
- ★ 1 Légion d'honneur, 1 ordre national du Mérite
- ★ 4 international prizes
- ★ 3 software prizes
- ★ Many PhD awards including 5 Gilles Khan prizes since 2016, 1 Ackerman prize in 2018

Organization

9 thematic research groups organized in 3 poles:

ALGORITHMS AND DISCRETE STRUCTURES

- Algorithms and complexity
- Combinatorics
- Complex systems, networks, and distributed computing
- Theory and algorithmics of graphs


AUTOMATA, STRUCTURES AND VERIFICATION


- Automata and applications
- Modeling and verification


PROOFS, PROGRAMS AND SYSTEMS

- Algebra and computation
- Analysis and conception of systems
- Proofs and programs

Initiatives

 INITIATIVE DE RECHERCHE ET INNOVATION SUR LE LOGICIEL LIBRE fosters exchange between developers and researchers

 LEARN-OCAML promotes learning and dissemination of the OCaml programming language

 PARIS CENTER FOR QUANTUM COMPUTING federates Parisian research on quantum computing

 SOFTWARE HERITAGE builds the world wide archive of all software, in partnership with Unesco

International

CNRS international structures:

- ★ 3 International Research Laboratories: Israel, Japan and Singapour
- ★ 2 International Research Projects: Argentina and Czech Republic
- ★ 2 International Research Networks: Italy and Germany–Austria–United Kingdom–Sweden

as well as:

- ★ 1 International Emerging Actions: China

Transfert

IRIF is partner of several companies including:

- ★ AdaCore
- ★ Microsoft
- ★ Oracle Labs
- ★ Atos
- ★ Mitsubishi
- ★ Total
- ★ IDQuantique
- ★ Nokia

Logiciels

Development of many major software including:

- ★ Babel
- ★ C-SHORE
- ★ Ocsigen
- ★ CDuce
- ★ CUDF
- ★ Stamina
- ★ Coq
- ★ Kappa
- ★ Vaucanson