Challenges and topics in Digital Transformation — from the viewpoint of a (National) Computer Society

Hannes Federrath

Past President (2018-2021) of German Informatics Society (GI)

University of Hamburg, Professor for Security in distributed Systems

18th European Computer Science Summit (ECSS),
Hamburg, 25. October 2022

www.gi.de

GI at a Glance

The GI, the German Informatics Society, is a non-profit association of highly dedicated computer science professionals in the German-speaking world.

The GI offers a unique professional network for sharing knowledge and experience about all current and relevant topics in computer science.

WE ARE INFORMATICS!

Gesellschaft für Informatik e.V.

GI at a Glance

With about 20,000 personal members, we are the largest neutral professional association for computer science in the German-speaking world.

- The GI is active nationally with about 30 regional groups.

- 14 Technical Committees of the German Informatics Society

- More than 30 regional chapters (with the ACM)

GI at a Glance

- Who are the members of the GI?

- Computer science professionals from research and academia

- IT professionals from public administration, business, and industry

- Educators teaching computer science in schools

- Apprentices and students aiming for a profession in IT

GI Technical Committees

The Technical Committees of the German Informatics Society

|						
Theory of Computation	Artificial Intelligence	Software Technology	Human-Computer Interaction	Data Bases and Information Systems	Technical Informatics	Operating, Communi-cation and Distributed Systems
Computer Science in Life Science	Graphical Data Processing	Business Informatics	Computer Science in Law an Public Adminis-tration	Computer Science and Education / Didactics of Computer Science	Computer Science and Society	Safety and Security – Protection and Reliability

Mission

Promoting the discipline of computer science by

- Interdisciplinary exchange regarding all facets of computer science & IT

- Raising public awareness of computer science

- Attracting the interest of young people in computer science

- Empowering women in computer science

WIR SIND
INFORMATIK
WWW.GI.DE
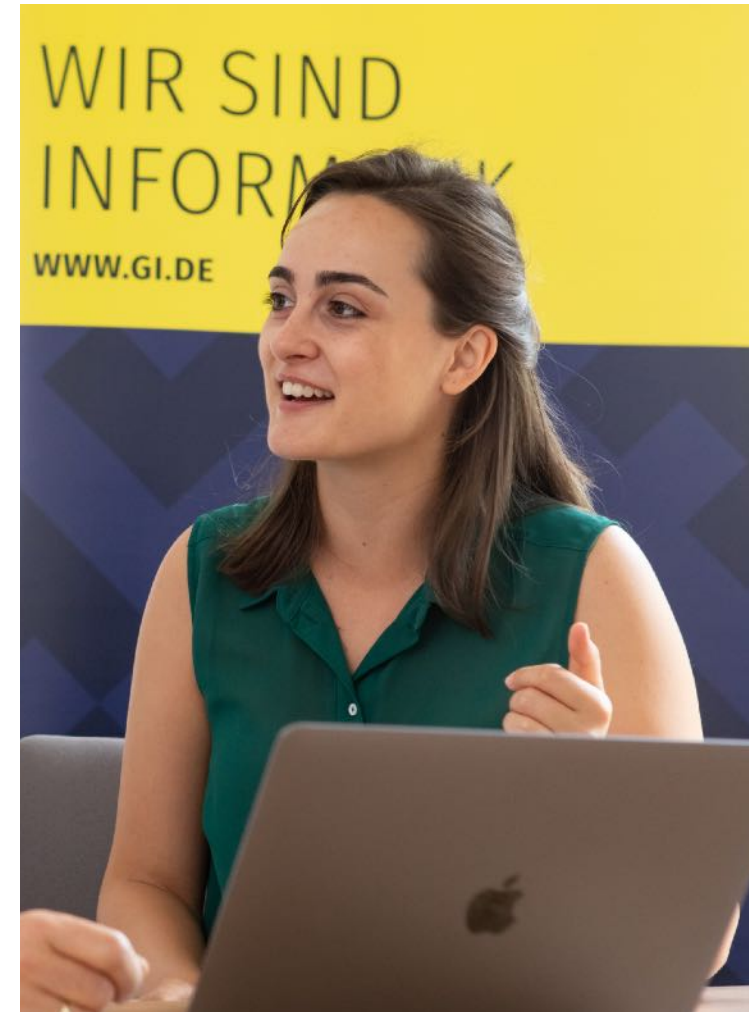
Mission

- **Living computer science** – through collaboration and sharing of knowledge and experience in our technical committees, special interest groups, regional groups, and at many conferences and workshops, on social media platforms, etc.

- **Advertising computer science** – through promotion of young talent, e.g. via Informatik-Biber, National Computer Science Competition, Computer Science Days, and informatiCup

- **Making computer science public** – by demonstrating the benefits and doing political lobbying – regarding social, educational, and research policy

Good Guy Bad Guy Paradigm

- Value driven design

- What is right? What is wrong?

- What if the rules are changing?

- Update the system?

Spheres of action

- **Political sphere** – acting with policy makers

- **Society sphere** – recognition in the public

- **Professional sphere** – supporting responsible work behaviour

Political sphere

GERMAN
INFORMATICS SOCIETY

Challenges

- Policy makers sometimes have less knowledge about risks of technologies

    or: risks are ignored in favour of the chances

- Goal:

    - Teaching and educating law makers

    - Neutral and serious positions of a national computer society

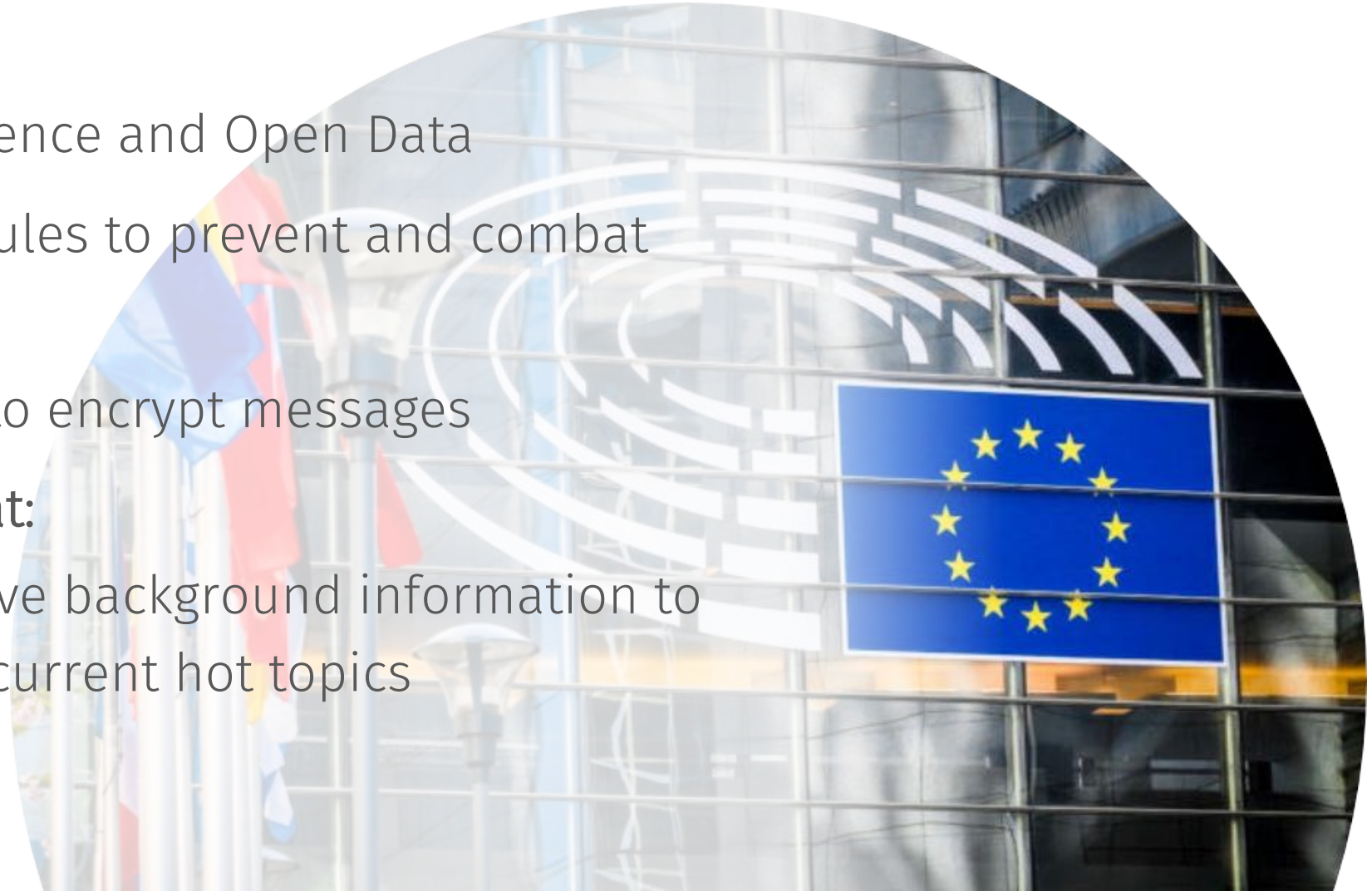   - Readiness to react and to communicate

Political sphere

Examples/Topics for GI

- Positions in Open Science and Open Data

- Commenting the EU rules to prevent and combat child sexual abuse

- Right and obligation to encrypt messages

- **Developed new format:**
  - GI Policy Brief – give background information to policy makers on current hot topics

Political sphere

07.10.2022 | Pressemitteilung

GI hält EU-Chatkontrollen für grundrechtswidrig

Die Gesellschaft für Informatik (GI) e.V. hat die Fortsetzung der Gesetzgebungsaktivitäten zur sogenannten „Chatkontrolle" bereits mehrfach stark kritisiert. Die EU-Kommission hält an den Plänen fest und greift entgegen aktueller EuGH-Rechtssprechung mit dem Gesetzesvorhaben zur Chatkontrolle vertrauliche Kommunikation frontal an.

Am Montag stellt EU-Innenkommissarin Johansson eine Rechtsvorschrift vor, die Online-Diensteanbieter dazu verpflichten soll, digitale Kommunikation und Daten automatisch und wahllos auf potenzielles Material zur sexuellen Ausbeutung von Kindern zu überwachen und verdächtige Nutzer automatisch der Polizei zu melden. Die Gesellschaft für Informatik (GI) kritisiert, dass durch diese sogenannten „Chatkontrollen" die private Kommunikation über Instant Messaging, Videokonferenzen, Chats und E-Mail-Dienste einer Massenüberwachung unterworfen wird und Hintertüren zu Ende-zu-Ende-verschlüsselten Kommunikationsdiensten erforderlich wären, während die Täter weiterhin geschlossene Foren, selbst gehostete Plattformen und P2P-Netzwerke nutzen könnten, ohne eine Entdeckung zu riskieren.

Der Sitz der Europäischen Kommission in Brüssel (c) Bundesregierung/Güngör

https://gi.de/meldung/gi-eu-chatkontrollen-sind-grundrechtswidrig

A right to secure communication and effective encryption for Europe

Secure and confidential communication is a cornerstone of our democratic society and a fundamental prerequisite for a functioning digital economy and society. Trust in our IT infrastructures is essential for Europe's digital future.

In the view of our experts, academics and IT professionals, all efforts to intercept and extensively monitor chat communication via client site scanning has a tremendous negative impact on the IT security of millions of European internet users and businesses. Therefore, a European right to secure communication and effective encryption for all must become a standard.

Europe has a right to secure communication and effective encryption

The confidentiality and security of digital communication are essential for our society. Not only does democratic discourse thrive on a free exchange of opinions, but our economy

Political sphere

GESELLSCHAFT
FÜR INFORMATIK

Digital
Autonomy Hub
Technik souverän nutzen
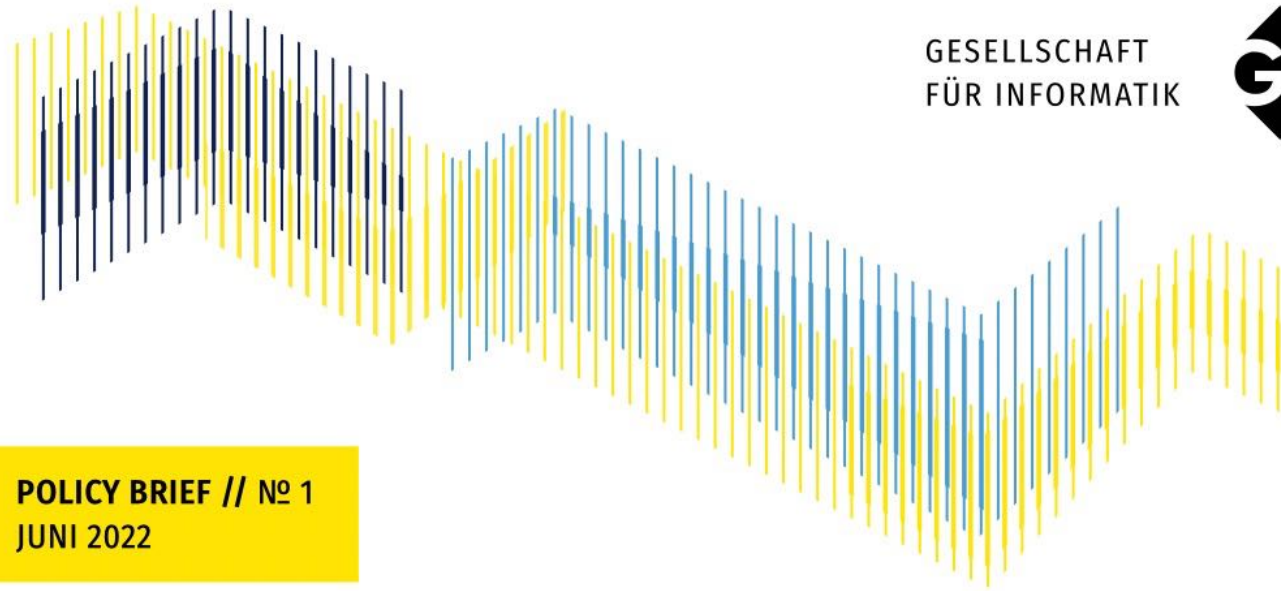
POLICY BRIEF // № 1
JUNI 2022

Aktive Cyberabwehr im Angesicht einer sicherheitspolitischen Neuaufstellung

Hannes Federrath, Alexander von Gernler, Nikolas Becker

Mit dem russischen Angriff auf die Ukraine ist auch die Bedeutung von IT-Sicherheit wieder stärker in das Bewusstsein gerückt. Angriffe auf kritische Infrastrukturen, wie auf mehrere Unternehmen der Windenergie-Branche im April/Mai 2022, verdeutlichen die

verpflichten alle staatlichen Stellen, ihnen bekannte Sicherheitslücken beim BSI zu melden und sich regelmäßig einer externen Überprüfung ihrer IT-Systeme zu unterziehen. Das Identifizieren, Melden und Schließen von Sicherheitslücken in einem verantwortlichen Ver-
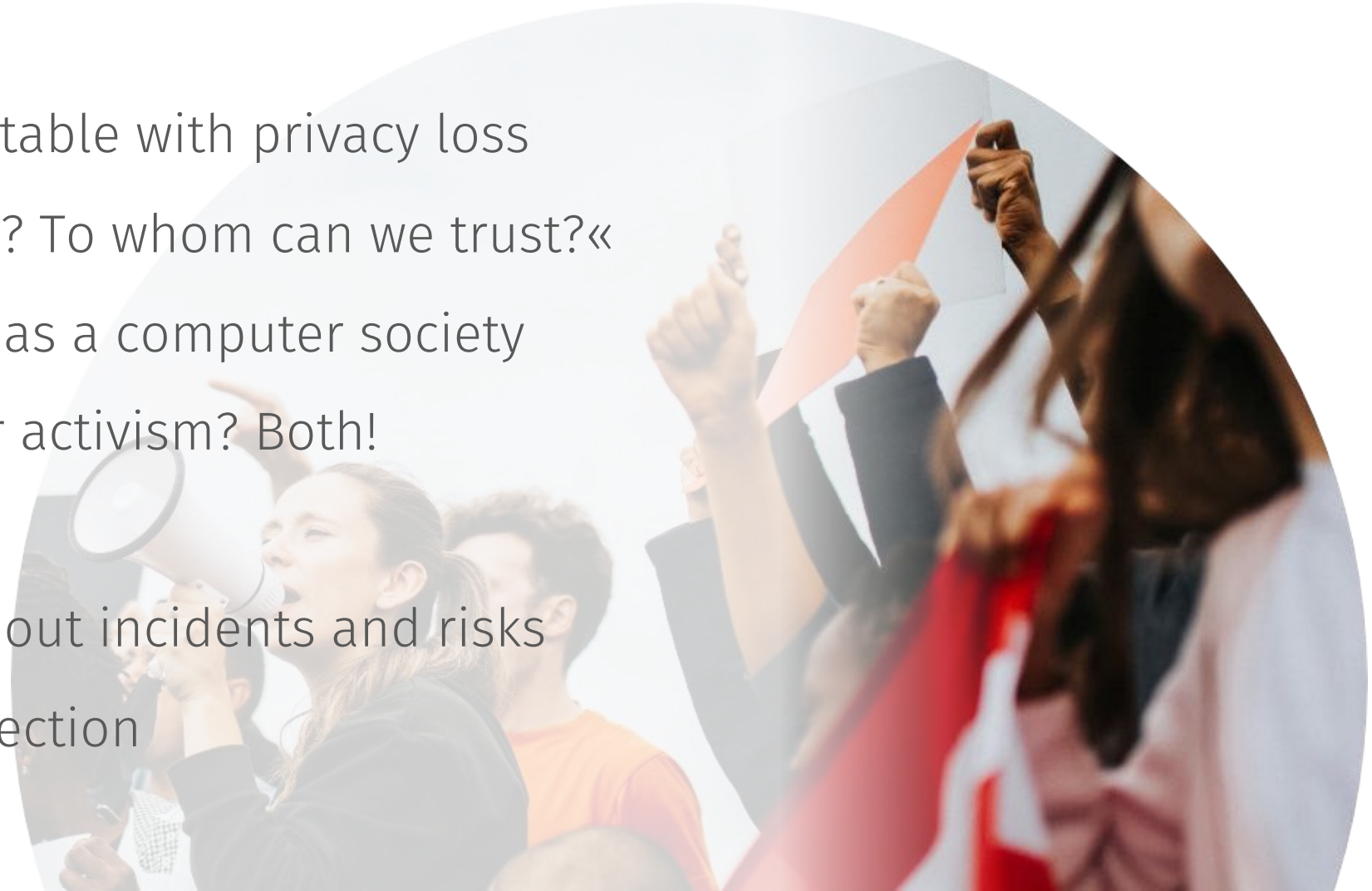
POLICY BRIEF #1
Dezember 2020

Data Trusts

https://tinyurl.com/347jhpyv

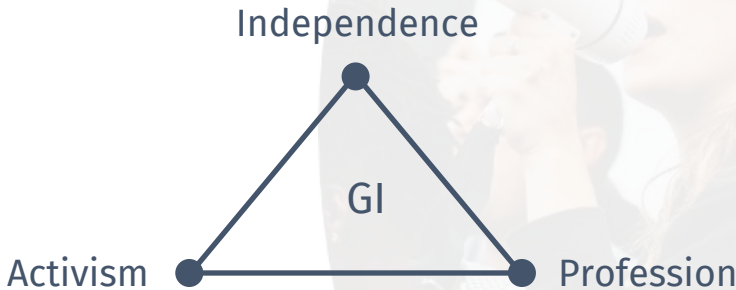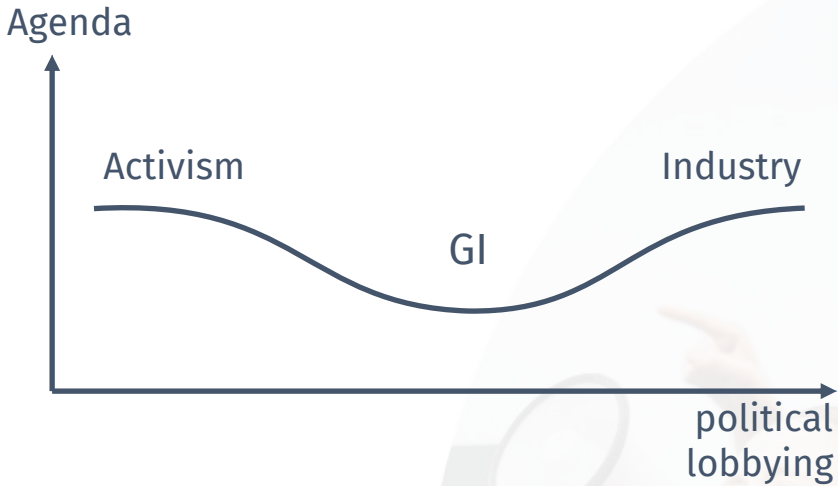https://tinyurl.com/ydnskv62

Society sphere

Challenges

- People feel uncomfortable with privacy loss

    »What can we do? To whom can we trust?«

- Have a clear position as a computer society

- Lobby organization or activism? Both!

- Educate the public about incidents and risks

- Gain trust in self protection

Society sphere

Lobby organization or activism?

Society sphere

Examples/Topics for GI

- Promotion of Corona Warn App

- Informatics Monitor: Describes the landscape for teaching activities at school

- Grand Challenges Initiative: Influence the research agenda of Germany and EU
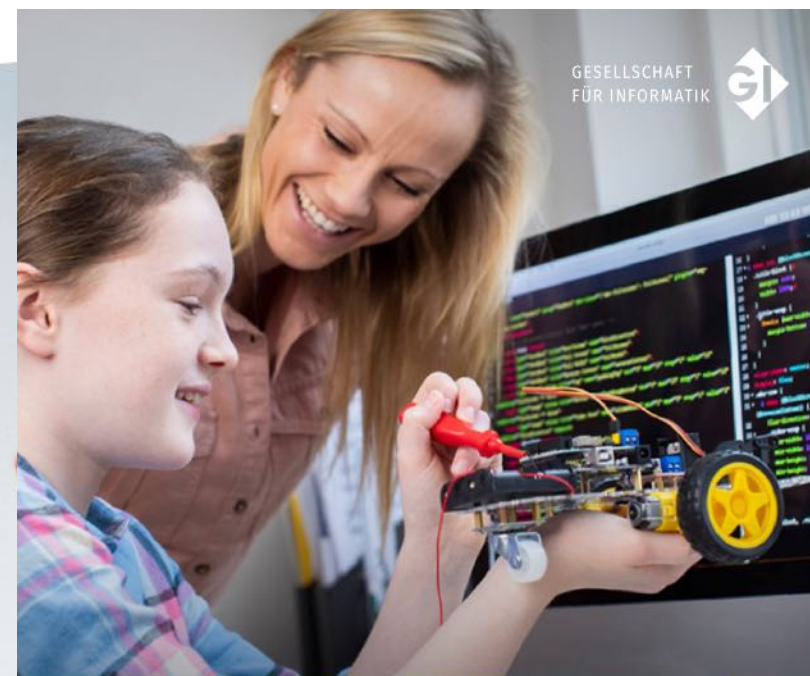
- Mission: Informatics as compulsory subject at school

Society sphere

Grand Challenges 2018:
- Digital Inheritage
- Future Internet
- Systemic risks in worldwide networks
- Ubiquitous Human Computer Interaction
- Dependability of Software

GESELLSCHAFT FÜR INFORMATIK E. V. (GI)

INFORMATIK-MONITOR

SEPTEMBER 2022

informatik-monitor.de

Professional sphere

Challenges

- Computer societies itself need to manage the digital transformation

- Meet the interests of young professionals

- COVID situation:
  - More and more digital formats
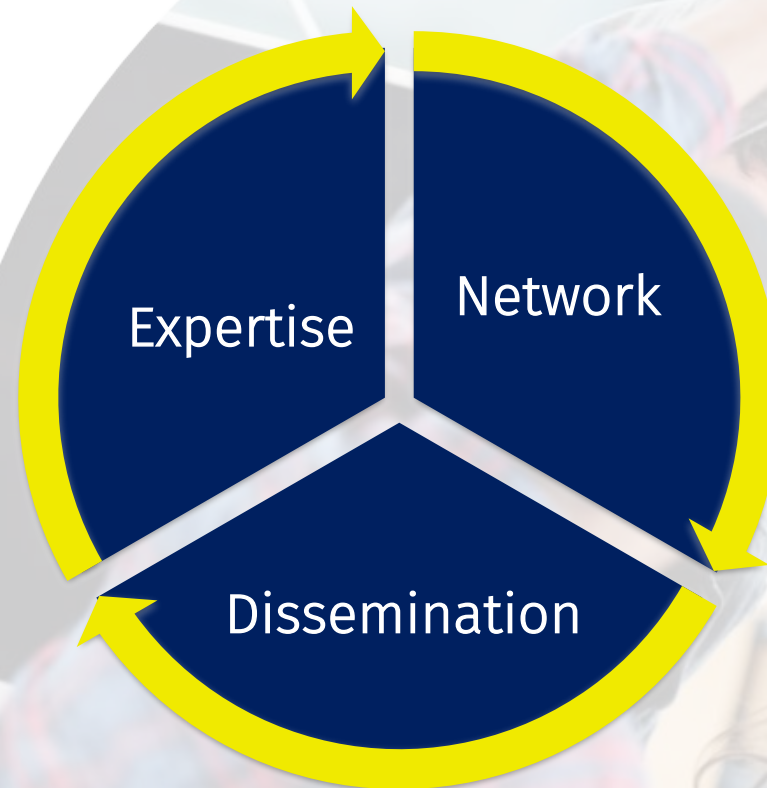 - New formats for collaboration and interaction

Professional sphere

Examples/Topics for GI

- Ethical rules (Code of Ethics)

- Young GI

- Mentoring Programme

- Expert profiles

Attract people to do networking in a computer professional society

GI Ethical Guidelines

GERMAN
INFORMATICS SOCIETY

Bonn, June 29, 2018

PREAMBLE

The German Informatics Society (GI) is a registered non-profit organization. With these guidelines, the GI seeks to establish that matters of professional ethics or moral conflicts become the subject of collaborative reflection and action. The guidelines are designed to offer a point of orientation not only to members of the GI association, but to all persons involved in the design, manufacture, operation or use of IT systems.

The ethical guidelines outlined herein express the intent of GI members to conduct themselves in accordance with the values that form the basis of Basic Law for the Federal Republic of German and the Charter of Fundamental Rights of the European Union.

The GI and its members are committed to adhering to these guidelines. They also seek to insure that these guidelines find acknowledgement in public discourse outside the GI.

GI members are especially committed to respecting and protecting human dignity. Whenever norms of the state, society or the private sphere come into conflict with these values, GI members must address the issue.

GI members conduct themselves in such a way as to advocate for the right to self-determination in information and communications technologies, and for the right to guarantee confidentiality and integrity of IT systems.

GI members advocate for discrimination-free organizational structures which take into consideration the divergent needs and diversity of all human beings in the design, manufacture, operation and use of IT systems.

GI members seek to engage and educate the public in discourse concerning the ethical and moral issues pertinent to their individual and institutional conduct. In a networked world, it is imperative that all potential courses of action be subject to interdisciplinary consideration regarding their foreseeable impact and potential consequences. This is the challenge for each of our members.

The fact that the guidelines established here are as open as they are is testimony to the fact that moral conduct cannot be governed by a definitive code of ethics or stringent regulations.

SECTION 1: PROFESSIONAL COMPETENCE

GI members stay abreast of the current state of science and technology in their respective areas of specialization; they take new developments into account and provide constructive criticism. GI members are constantly working to improve their professional competencies.

SECTION 2: EXPERTISE AND COMMUNICATIVE COMPETENCE

GI members are constantly improving their levels of expertise and communicative competencies in order to meet the demands relevant to their duties in the design, manufacture, operation and use of IT systems and to understand the surrounding professional and technical contexts. In order to assess the consequences of IT-systems in the application environment and to propose suitable solutions, there must be a willingness to understand and take into account the rights, needs and interests of those parties who are impacted by them.

SECTION 3: LEGAL EXPERTISE

GI members are familiar with and observant of pertinent legal regulations concerning the design, manufacture, operation and use of IT systems. GI members, in conjunction with their expertise and professional competencies, participate actively in drafting legislative regulations.

SECTION 4: POWERS OF DISCERNMENT

GI members sharpen their powers of discernment to render themselves better equipped to contribute to design processes with individual and collective accountability. This presupposes not only a willingness to call into question and to make judgments about individual and collective actions in public discourse, but also the ability to acknowledge the limits of one's own powers of discernment.

SECTION 5: CONDITIONS OF EMPLOYMENT

GI members are active proponents of socially equitable contractual agreements concerning terms of employment, inclusive of opportunities for professional development and shared governance.

SECTION 6: ORGANIZATIONAL STRUCTURES

GI members advocate for organizational structures which foster and facilitate socially equitable contractual agreements concerning terms of employment.

SECTION 7: TEACHING AND LEARNING

GI members who are computer science instructors foster in their students the capacity for critical thinking; they prepare learners to accept their own individual and collective responsibility, and they act as role models in this regard.

SECTION 8: RESEARCH

GI members who conduct research in the field of computer science adhere to the rules of best practices in scientific research. Of particular importance in this regard is openness and transparency in dealing with criticism and conflicts of interest, the ability to express and to accept criticism as well as the willingness to allow the impact of one's own scientific work in the research process to become the subject of discussion. Scientific research breaches boundaries. These must be clearly articulated.

SECTION 9: COURAGE OF CONVICTIONS

GI members staunchly advocate for the protection and safeguarding of human dignity, even when this is not explicitly mandated by laws, contracts or other norms, or when these stand in direct opposition to the protection and safeguarding of human dignity. This applies even in situations in which GI members' obligations to clients conflict with their responsibility to third-party stakeholders.

SECTION 10: SOCIAL ACCOUNTABILITY

In the design, manufacture, operation and use of IT systems, GI members should contribute to the betterment of local and global living conditions. GI members are responsible for the social and societal consequences of their work. Their influence on positioning, marketing and further development of IT systems should contribute to the socially acceptable and sustainable application of these technologies.

SECTION 11: FACILITATING SELF-DETERMINATION

GI members work toward ensuring that those people impacted by the usage and conditions of use of IT systems are granted adequate opportunity to participate in the design of these systems. This is especially pertinent with regard to systems whose application involves the exerting influence over, monitoring, or surveillance of said populations.

SECTION 12: THE GERMAN INFORMATICS SOCIETY

The German Informatics Society encourages its members to adhere to these guidelines at all times. The GI shall attempt to mediate between parties in situations in which conflicts arise.

GESELLSCHAFT
FÜR INFORMATIK

UNSERE
ETHISCHEN
LEITLINIEN

GI.DE

gi.de/ethicalguidelines

Nächste Veranstaltungen

Nach Kategorien filtern ▼   🕓 Vergangene Veranstaltungen

📅 **28.10.2022**   ITCS Tech Konferenz, IT-Jobmesse &   MOC

Spheres of action

Modern Computer Societies as a Moderator of the Digital Transformation

Political – acting with policy makers

Society – recognition in the public

Professional – supporting responsible work behaviour

INFORMATICS MOVE, INFORMATICS ARE FUTURE, WE ARE INFORMATICS!

GERMAN
INFORMATICS SOCIETY

GI

Hannes Federrath

Past President (2018-2021) of German Informatics Society (GI)

University of Hamburg, Professor for Security in distributed Systems

18th European Computer Science Summit (ECSS),
Hamburg, 25. October 2022

www.gi.de