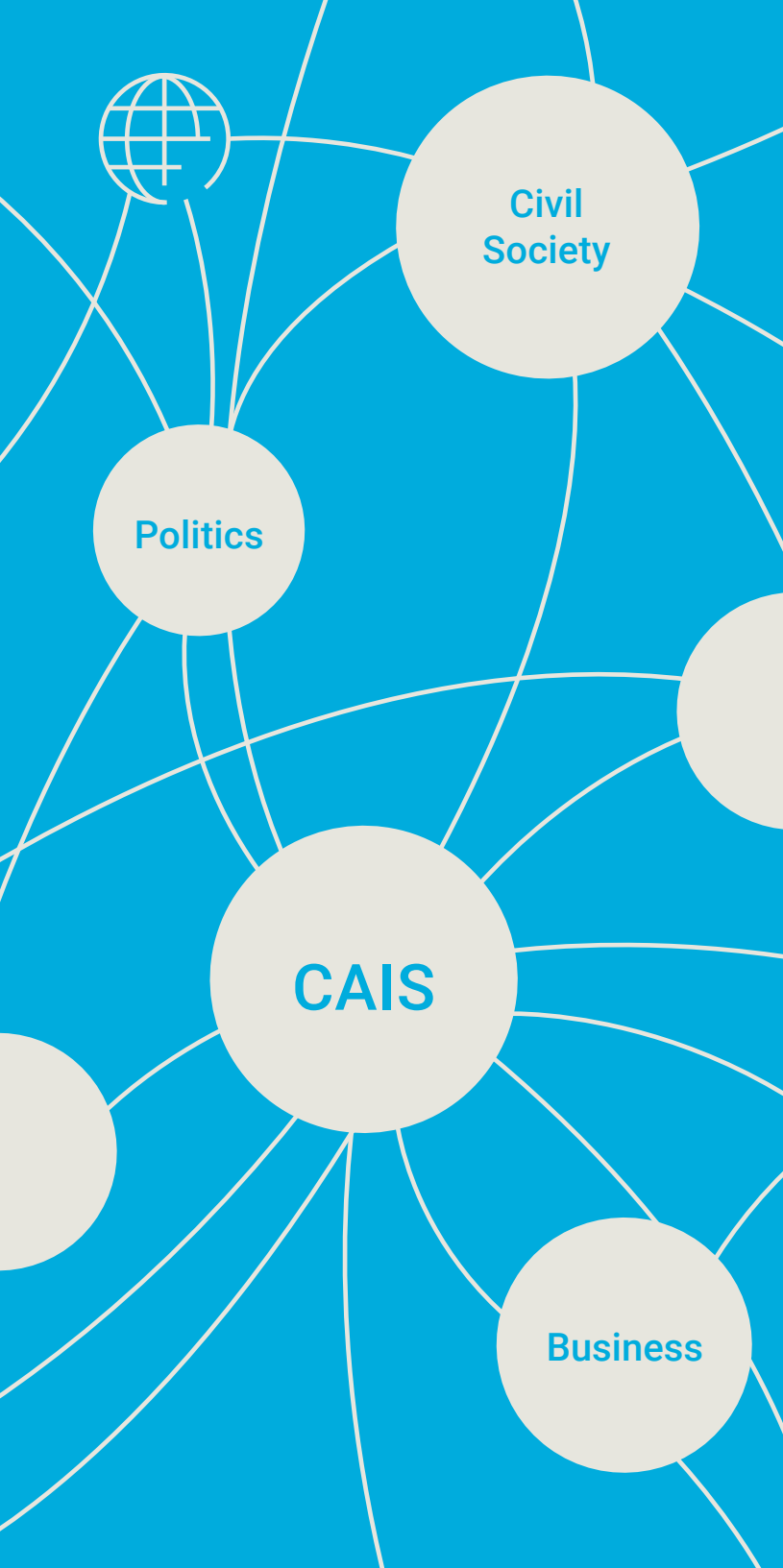# CA|S

RESEARCH
FOR THE
DIGITAL AGE

Civil
Society

Politics

CAIS

Business

Shaping the Digital Transformation

In our research at the Center for Advanced Internet Studies (CAIS) we aim to understand the fascinating dynamics of the digital age. We foster a culture of Open Science in dialogue with policymakers, businesses, and civil society. CAIS seeks to inspire a critical public debate on how to shape the digital transformation in people's interest and achieve a self-determined life in the digital society.

What is happening at CAIS?

Why we do research

One of the central challenges of democratic societies is to harness the potential of digitalization for human interests, needs, and capabilities. Through excellent research and in dialogue with the public, we aim to help shape the digital society in a people-friendly way.

What we do research on

CAIS explores the digital transformation in its social, political, economic, cultural, and technological facets. Using an innovative Research Incubator to identify socially relevant topics, we conduct interdisciplinary research programs to investigate them.

How we do research

The research programs at CAIS bring together different disciplines from the social sciences and the humanities to computer science. Basic research is combined with practical application. The programs run for five years at a time and address different topics, thus allowing a flexible response to the changing needs of society.

Who does the research

We are a team of experienced and young researchers from different disciplines who interact closely with practitioners in society. Two academic directors from the social sciences and computer science will lead CAIS. Professors from various disciplines coordinate the research programs.

Where we do research

Located in Bochum, CAIS conducts research together with its partners: the Ruhr University Bochum, the University of Duisburg-Essen, the Heinrich Heine University Düsseldorf, the University of Münster, as well as the Grimme Institute in Marl, and the Leibniz Institutes for the Social Sciences in Cologne (GESIS) and for Economic Research in Essen (RWI).
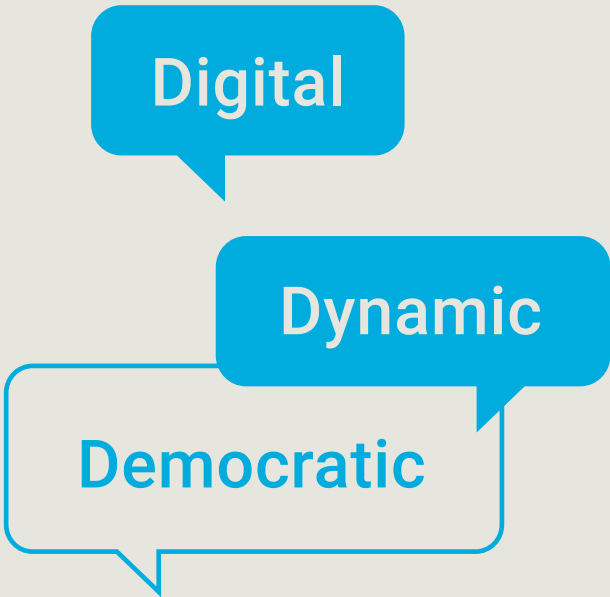
Research Programs

Since its founding in 2017 as an Institute for Advanced Study, CAIS has welcomed numerous experts from all over the world to Bochum to carry out their research projects. Since 2021, CAIS has been further expanding into an institute with its own research programs.
The first research program "Digital Democratic Innovations" started in October 2021, followed in mid-2022 by a research program on educational technologies and Artificial Intelligence. In 2023 a program on the design of trustworthy Artificial Intelligence is planned.
The research programs are coordinated by the resident professors at CAIS. External research excellence is incorporated by the Fellows at CAIS College and through cooperation with its associate institutions. In addition, CAIS initiates research partnerships and collaborative projects with universities and research centers.

Digital

Dynamic

Democratic

Research Program "Digital Democratic Innovations"

Led by Professor Christoph Bieber, the first research program at CAIS focuses on the transformation of democracy in a digital society and on the possibilities of shaping this process. The starting-point is the dynamic interrelationship between a data-oriented state on the one hand and digital civil society on the other. How does political decision-making change when voting procedures or elections are supported digitally? How do digital tools and new spaces of communication affect public participation in democracy? These and related questions are the focus of an interdisciplinary team that is exploring the use of new technologies in the public interest.

Research Program "Educational Technology and Artificial Intelligence"

AI at School?

Launched in summer 2022, the second research program at CAIS led by Professor Nikol Rummel is investigating how the potential of digitalization can be utilized in educational settings. One emphasis of the program is on issues concerning the design and technical implementation of digital learning environments.
A second focus is on the challenges and opportunities of teaching in such environments. A third objective is to explore the possible contributions of AI to the "Smart Classroom of the Future". The overall aim is to facilitate flexible and dynamic interaction processes between learners, teachers, and educational technologies.

Real-world Labs

Shaping the digital transformation through research requires interaction with society and the application of research findings to practical contexts. This is the goal of Real-world Labs at CAIS. As interfaces between research and practice, such labs are designed and implemented in collaboration with partners from business, politics, education, and civil society.
In contrast with traditional laboratory and field experiments, projects in Real-world Labs aim to solve actual problems and evaluate how effective these solutions are. Possible fields of application include digitally mediated citizen participation, algorithm-supported decision-making in politics and business, and digital tools promoting sustainability.

Collaborative Implementation

Practical Solutions

Evidence-based Findings

Research Data & Methods

The two core tasks of the Research Data & Methods team (RD&M) are to support researchers at CAIS in the various aspects of their work, and to conduct their own research on methods, research data management, and Open Science.

The support of RD&M covers all phases of the research cycle, in particular study design, data collection, data management and the sharing and publication of results and data.

The team's own research focuses on general theories and methods dealing with digital trace data, data access and sharing, and on the specific motivations, practices, and requirements of scientists within digitalization research.

Ethical, Legal & Social Issues

The Ethical, Legal & Social Issues team (ELSI) explores the digital transformation from the perspectives of ethics, law, and the social sciences.

Digitalization processes are changing individual ways of living and everyday interactions, the collective balancing of interests, political decision-making, and public communication. These changes present opportunities but also entail risks for individuals, groups, and entire societies.

ELSI examines which societal goals, ethical principles, and social norms can inform legal regulation and social practices to promote a self-determined life in a digital society.

Participatory

Research Incubator

The innovative Research Incubator at CAIS uses a structured process to identify salient topics for digitalization research and for the Center's research programs. It also supports interdisciplinary collaboration at CAIS.

The process of identifying topics alternates between collecting and condensing findings using different tested and enhanced formats. These range from Delphi studies to surveys, and from expert roundtables to co-creative, participatory citizen science.

Open

Interdisciplinary

Agile Science

Dynamic social developments caused by the digital transformation pose new challenges for research. CAIS is developing agile working methods in an academic context. This requires rethinking organizational structures and project management so that collaboration in and between interdisciplinary teams can be improved. Alongside the academic community, citizens and practitioners are being involved in participatory research.
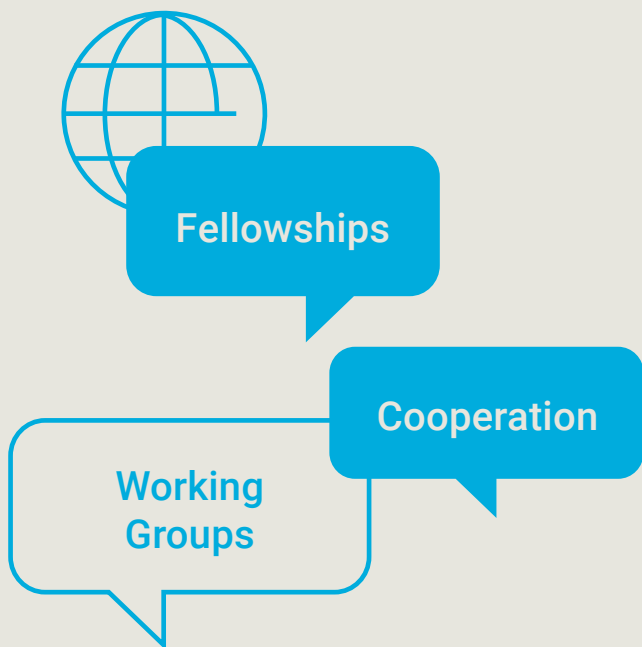
Innovative Digitalization Research

CAIS College

Bright minds from all over the world enrich the research community at the Center. CAIS College welcomes Fellows and working groups to Bochum to conduct research and develop creative concepts to shape the digital transformation.
Fellows spend up to six months living and working at CAIS. During this time they are released from their everyday working obligations and are offered an inspiring interdisciplinary environment that opens up new perspectives.
Working groups of up to twelve members with diverse expertise are brought together in Bochum to work on joint projects and objectives.

Fellowships

Cooperation

Working Groups

National and International Networking

CAIS cooperates with national and international research institutions and partners outside the academic domain. It is a member of networks such as the Global Network of Internet and Society Research Centers (NoC) and is constantly forging new institutional links. Networking establishes contacts for inter- and transdisciplinary exchange, initiates research partnerships, facilitates joint events, and attracts Fellows and visiting scholars. An exchange program promotes reciprocal visits between members of CAIS and its partner institutions to share their experience and work together.

Promoting Early Career Researchers

CAIS provides a comprehensive qualification program for Early Career Researchers that imparts fundamental knowledge of digitalization research. The program helps them to understand digital transformation from different disciplinary perspectives, to acquire specific skills in this field of research, and to develop a profile for activities outside academia.

"PhDnet@CAIS. Society and Digitalization" is a networking offer that is open to PhD students at universities and other institutes of higher education. The PhDnet organizes regular meetings and topic-specific events such as summer schools and methodological workshops.

PhDnet@CAIS

Qualification for PhD Students

Science Communication

CAIS actively participates in the public discourse on the social opportunities and challenges of digitalization. By communicating its research, CAIS aims to further political and social debates through evidence-based insights. The Science Communication team initiates regular exchange with representatives from politics, business, and civil society. The team interacts with the public on an equal basis using innovative approaches and digital formats – from hybrid workshops and social-media channels to podcasts and livestream

Partners

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E S S E N

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