PhD Descriptions

WHY YOU SHOULD APPLY
2 CROSS-DOMAIN APPLICATIONS
2 WORKING IN PROTOTEAMS
2 REAL-WORLD CHALLENGES
3 A POST-INDUSTRIAL APPROACH
3 INTERNATIONAL ENVIRONMENT
3 EXCELLENT SUPERVISION

WHAT YOU NEED TO KNOW
4 MSCA ELIGIBILITY AND MOBILITY CRITERIA
4 COVID FLEXIBILITY
4 DEADLINES

THEMES
5 OVERVIEW
6 INCLUSIVE DIGITAL FUTURES
7 TRUSTED INTERACTIONS
8 SUSTAINABLE SOCIO-ECONOMIC MODELS
9 DEMOCRATIC DATA GOVERNANCE
10 FUTURE DESIGN PRACTICES

CONTACT
Design-driven ecosystems for the digital transformation of society

It means that our PhD researchers will be working in contexts that cut across private and public sectors, and connect domains such as urban mobility, energy sharing, health and care, insurance, banking and digital ethics.

Signature of DCODE is the idea of prototeams. Teams of PhD researchers with different disciplinary backgrounds will be iteratively deployed in different real-world sectors to develop and prototype future design roles and practices.

A programme of training will be provided including core research skills, design research methods, public engagement and communication, participatory leadership, responsible innovation, digital inclusion and literacy, gendered perspectives and legal/policy issues around Artificial Intelligence. This will be delivered in conjunction with a network of internationally leading companies and organisations including Philips/Design Innovation, RISE Interactive/Digital Ethics, Amsterdam Institute for Advanced Metropolitan Solutions/Responsible Urban Digitization, Advance Care Research Center/Legal & General and Centrum Cyfrowe/Communia.

PhD researchers will also be funded to attend international events and conferences. A dedicated mentoring programme on inclusion and diversity will be available for all recruits.

AMS Institute, RISE Interactive and ACRC (Advance Care Research Centre) are expected to play a key role in setting up a context and help identify concrete cases and design challenges for the work of the prototeams, in collaboration with the DCODE project team, the other non-academic partners, and their broader network of stakeholders. Cases and assignments will feed the development of approaches, methods, propositions and solutions from the PhD researchers.
We are living in the midst of a digital transformation of society. The industrial revolution happened, and it’s over. Yet, design practice is stuck in the past and struggles to reconcile human values and algorithmic logics into socially, economically and politically sustainable models. We lack the knowledge, skills and roles within companies or organisations to design for interaction with autonomous technologies in ways actually beneficial to humankind, and thus to responsibly anticipate and steer this transformation. Imagining and manifesting alternative futures has to be a proactive effort. It’s time to rethink design and create new pathways to the future. DCODE aims to break new ground by positioning agency as foundational to the design of digital futures as was once the notion of function to industrial design.

Being part of the DCODE network offers unique possibilities for training: dedicated summer/winter schools for all PhD candidates in which training will be delivered by renowned academics and practitioners; participation in “prototeams”, e.g., teams of PhD candidates with different disciplinary backgrounds who will engage with the real world to ethically develop and iteratively prototype future technologies, design roles and practices; exchanges abroad for training and collaboration with others partners; a wealth of resources for European training and collaboration.

PhD candidates will be supervised by multidisciplinary, cross-organizational teams of leading figures in the field, including:

- Saskia Bakker
- Somaya Ben Allouch
- Roy Bendor
- Alessandro Bozzon
- Nazli Cila
- Elisa Giaccardi
- Irina Jackiva
- Gerd Kortuem
- Peter Lloyd
- Ewa Luger
- Dave Murray-Rust
- Bettina Nissen
- Larissa Pschetz
- Jeroen Raimakers
- Johan Redström
- Marco Rozendaal
- Neil Rubens
- Neil Rune
- Irina Shklovski
- Rachel Charlotte Smith
- Heather Wiltse
DCODE PhD Descriptions

WHAT YOU NEED TO KNOW

MSCA ELIGIBILITY AND MOBILITY CRITERIA

DCODE is funded by the European Commission’s Marie Skłodowska-Curie programme and to be eligible for this funding:

• You must not already hold a PhD and have less than four years of research experience since you gained the degree that qualifies you for this post

• You must not have resided or carried out your main activity (work, studies, etc.) in the selected country for more than 12 months in the 3 years immediately prior to your recruitment, and you must work on the project full-time

• You are expected to be embedded for two to four months at other organizations in the consortium as part of placements and assignments, before returning to complete their PhD in their respective institutes.

COVID FLEXIBILITY

The COVID-19 outbreak has caused major disruptions for many researchers, projects and organisations, including those working with EU funding. In agreement with the European Commission, DCODE may adopt a flexible approach to how mobility rules are applied, including remote working and online collaboration until travel and relocation become feasible.

DEADLINES

Applications open on January 8th 2021 and close on February 14th 2021. The website dcode-network.eu will launch when the call is open and include a link to all vacancy forms.
DESIGNING PATHWAYS TO ...  

DCODE offers 15 PhD positions in the following areas

INCLUSIVE DIGITAL FUTURES
Anthropologists, data scientists and engineers need to be better integrated in the fuzzy front end of the design process, so that early steps can be made in designing algorithms that are conducive to sustainable digital futures. How do we understand human-machine relations and shape the desired interaction between algorithms and humans?

SUSTAINABLE SOCIO-ECONOMIC MODELS
Data-driven technologies are enabling business models and economies that are far from fair. How can we conceptualise and promote the currency of alternative values, and sustain more transparent and inclusive socio-economic models in the digital society?

TRUSTED INTERACTIONS
Designing for interaction with and across decentralised systems requires new ways to navigate and negotiate concurrent and conflicting needs, and the potential imbalance in the relationship between people and predictive systems. How we achieve that human interaction across decentralised systems remains appropriate, in the interest of people and society at large?

DEMOCRATIC DATA GOVERNANCE
Contracts between service providers, users and third parties are often problematic in terms of how flows of data are generated and shared. How can we enable more democratic forms of digital sovereignty and deliberation for how data is governed?

FUTURE DESIGN PRACTICES
The responsible and sustainable digital transformation of society will require new postdisciplinary and cross-sector design practices, upholding anticipatory, deliberative and responsive innovation approaches. How can we bring together the learning of the DCODE prototeams, and identify best practices?
INCLUSIVE DIGITAL FUTURES

How to understand machine behaviour and shape the desired interaction between algorithms and humans?

**Design anthropology for sustainable human-machine relations**

*DENMARK*
University of Aarhus, Department for Digital Design and Information Studies

This project is about shaping algorithms on the basis of an integration of humanistic and computational approaches. The research explores how anthropology, data science and engineering can work together in the fuzzy front end of the design process and address the unanticipated consequences of human-machine relations, so that early steps can be made in designing algorithms that are conducive to sustainable digital futures. A central outcome of the project will be a novel design anthropology approach to human empowerment in the design of algorithms, based on new understandings, scenarios and principles of human-machine relations.

**Design and engineering methods for principled development of data, models and behaviours**

*NETHERLANDS*
Faculty of Industrial Design Engineering, Delft University of Technology

This project is focused on developing novel methods and tools for shaping, testing and evolving machine behaviour. In this project we will investigate the adaptation of approaches drawn from data science and HCI to explore how behaviour, models and data can be developed concurrently in a principled manner. This will support the design of machine learning driven systems that work and grow alongside humans.

**Machine learning methods for sustainable design futures**

*LATVIA*
Data Analytics and Artificial Intelligence Research Cluster, TTI

This project is about developing machine learning methods suitable for design tasks in which human needs and values are driving forces, instead of the typical focus on efficiency and optimisation. In this project you will investigate what machine learning metrics are most apt for guiding these tasks and for navigating the associated design trade-offs (e.g., between accuracy and fairness).
TRUSTED INTERACTIONS

How do we achieve that human interaction across decentralised systems remains appropriate, in the interest of people and society at large?

Designing for multi-intentional interaction

NETHERLANDS
Faculty of Industrial Design Engineering, Delft University of Technology

This project is focused on the challenges of decentralised interaction with data-driven systems, and the development of novel design principles for multi-intentional interaction. In this project we will explore how future interfaces can manifest the potentially conflicting needs of the many users of a data-driven product-service system (“multi-intentionality”), and focus on the use of techniques that can provide an additional layer of legibility of the system’s behaviour and enable trust.

Designing co-predictive relations

NETHERLANDS
Faculty of Industrial Design Engineering, Delft University of Technology

This project is focused on the challenges of delegation in the relationship between people and co-predictive systems, and the development of novel design principles for predictive relations. In this project we will explore how different forms of recursive interplay between user and system (“co-performance”) can provide handles to a more equitable interaction between people and predictive systems, and how such forms of interaction may shape users’ sense of futurity.

Designing for contestable systems

SWEDEN
Umeå Institute of Design

This project is focused on the challenges involved in making it possible for people to contextualise and negotiate a data-driven system’s response (“response-ability”) in and through use. In this project we will explore what features, mechanisms and techniques need to be designed and implemented in the front-end for people to understand, contest and possibly repair inappropriate actions by a system. Working with research through design, we aim to create an annotated collection of design examples and interaction features for contestable data-driven systems.

Designing for trusted collaboration in human-AI teams

NETHERLANDS
Philips, Design Innovation

This project will explore the design of AI-enabled clinical decision-support systems from the point of view of human-AI collaboration. In particular, it will explore the different roles AI-powered systems can play in medical teams, e.g. to provide continuity and knowledge transfer across teams. You will leverage data and AI as a design material in the creative process and impact people’s lives through meaningful AI- and data-enabled experience concepts.
SUSTAINABLE SOCIO-ECONOMIC MODELS

How to sustain inclusive approaches in designing data-driven products, services and business models?

Multi-sided value in data-driven services

DENMARK
University of Copenhagen, Department of Computer Science

This project is focused on exploring the role of economic exchange in the maintenance of informal social relations bound by data-driven technologies. The research will be based on case studies of existing socio-technical networks 'in the wild', to explore how existing services construct value propositions and what is actually delivered in the end.

Co-creating multi-sided value propositions

UNITED KINGDOM
University of Edinburgh, Institute of Design Informatics

This project will explore the design methods that are required to capture and represent value. In particular, to investigate and co-develop with commercial, civic and public partners design scenarios that surface the various values generated and exchanged through data and better balance the interests of multiple stakeholders.

Designing sustainable socio-economic futures

UNITED KINGDOM
University of Edinburgh, Institute of Design Informatics

This project will involve the design of prototypes that rebalance the co-creation of value through data, allowing people to identify alternative values and testing their currency through prototype services. Focus on developing specific workshops formats that will enable both commercial and civic stakeholders to design how data should flow between parties.
DEMOCRATIC DATA GOVERNANCE

How to design principles and mechanisms for public deliberation and data governance across systems?

Envisioning models of data governance

UNITED KINGDOM
University of Edinburgh,
Institute of Design Informatics

This project is focused on the development of new models of governance through (for example) distributed and decentralised services, with the intention of generalising for cross-sector use. The successful applicant will explore, in particular, how to identify, define and manage dynamic relationships between people, communities, companies and governments to uncover where tensions may arise and explore solutions in an inclusive way.

Designing alternatives for the Terms of Service (ToS)

SWEDEN
Umeå Institute of Design

This project is focused on what ethical frameworks may be used for supporting new types of contracts between service providers, users and third parties. In this project we will review and critique existing terms of service (ToS) to initiate a shift from ‘terms of use’ to new forms of ‘social contracts’ that better distributes power and control, and provides a company’s social license to operate. Here, our objective will be to develop and design a negotiable and dynamic ‘social contract’ model, based on a critique of existing ToS.

Designing mechanisms for public deliberation on data use

SWEDEN
Umeå Institute of Design

This project is focused on the possibilities and mechanisms for collaborative deliberation on data collection and use in the public interest. In this project we will explore how different stakeholders can be brought together in collaborative deliberation efforts, and how mechanisms can be built into either commercial or public data-driven platforms to achieve substantive deliberation outcomes in relation to shared matters of concern. Working with research through design, we aim to develop and design mechanisms for collaborative and public deliberation on data collection and use, tested with civil society organisations.
FUTURE DESIGN PRACTICE

What new interdisciplinary and cross-sector design practices are needed for a responsible and sustainable digital transformation of society?

An ethics-in-action framework for designing data-driven product service systems

DENMARK
University of Copenhagen, Department of Computer Science

This project is focused on exploring how ethical standpoints can be leveraged and enacted across the four areas of design in DCODE from engineering autonomous systems and designing their interaction with end-users to leveraging new economic and governance approaches in system implementation. The expected outcome is a reasoned collection of best practices upholding principles of inclusivity, deliberation and sovereignty in the design of data-driven product service systems.

Prototyping new professional roles and design practices for the digital society

NETHERLANDS
Amsterdam University of Applied Sciences, Digital Life Centre

This project is about identifying the post disciplinary knowledge and skills needed for future collaboration across different disciplines and sectors in the field of design, with focus on prototyping new professional roles and developing speculative job profiles. In this project we will explore how the iterative deployment of small teams with different disciplinary background in real-world settings (“prototeams”) within DCODE enables us to speculate, situate and understand the emerging and future needs of responsible and inclusive design practices.
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