

Henrik Kragh Sørensen

Strategic Advisor | AI Implementation | Digital Transformation

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Profile

I think through data – very large amounts of it. For 20 years I have worked with AI and data analysis, and my experience and strengths lie where complex problems require both deep domain knowledge and practical problem-solving. I work independently and thoroughly, and I am strong at building bridges – between disciplines, between technology and organisation, and between data and decision. With a background in leadership, AI implementation, and strategic advising, I bring both analytical precision and the ability to communicate complex findings to non-technical stakeholders.

Core Competencies

Data Analysis & Infrastructure

- Big data processing: ML analysis of millions of documents
- Data-driven management information for strategic decision support
- AI implementation: LLM integration, computer vision, automation
- Technologies: Python, Claude, SQL, C/C++

Project Management & Strategy

- Portfolio management of cross-disciplinary projects
- Organisational analysis and strategic development
- Cross-disciplinary collaboration across humanities and science
- Grant applications and research funding management

Leadership Experience

- Deputy Head of Department (2017–2021): Strategic development, staff engagement, scenario analysis
- Section Leader (2016–2021): Performance reviews, recruitment, team development, budget responsibility
- Assessment committees: Evaluation and hiring at all academic levels

Selected Projects & Results

Machine Learning-Based Diagram Detection

2020 – present

Research Project Lead | DH4PMP, University of Copenhagen

- Computer vision for automatic identification of mathematical diagrams in scientific publications – enabling large-scale analysis of how visual reasoning has evolved in mathematics
- Trained ML models on millions of pages of mathematical material (object detection), producing structured datasets that can support both historical and computational research
- Developed a Flask-based web interface allowing non-programmers to annotate and curate data – directly transferable to any organisation needing human-in-the-loop AI workflows
- Implemented a scalable pipeline from PDF to structured data, built for reproducibility and long-term maintenance

AI Bias in Image Generation

2024 – present

Research Project Lead | DH4PMP, University of Copenhagen

- Systematic investigation of how generative AI models represent different groups – using implicit and contrastive prompting to surface hidden assumptions in models such as DALL-E and Midjourney
- Developed a coding framework for classifying AI-generated images across dimensions of gender, ethnicity, and professional stereotype
- Directly relevant for any organisation using generative AI for communication, HR, or product development – where unexamined bias can have real consequences

Digital Humanities for Philosophy of Mathematical Practice (DH4PMP) 2018 – present
Research Group Leader | University of Copenhagen

- Built data infrastructure for processing large corpora of scientific publications
- Implemented LLM-based analysis tools (paper-qa, bibfetcher) for automated literature processing
- Coordinated cross-disciplinary team across humanities, computer science, and mathematics
- Developed tools for automatic bibliographic metadata extraction – reusable across research and library contexts

Computational Combinatorics Research 2010s
Co-author & Programmer | International collaboration

- Developed deep-recursion algorithms for combinatorial problems
- Implemented performance optimisation techniques in C/C++ for analysis of complex mathematical structures
- International research collaboration in computational mathematics
- Peer-reviewed publications in international mathematics journals

Work Experience

Professor 2016 – present
University of Copenhagen

- Teaching philosophy of science for students in computer science, mathematics, and machine learning
- Research publications in national and international journals ([see website](#))
- Supervision of research projects at bachelor and master level
- Public outreach through TV, radio, newspapers, journals, and public lectures

Deputy Head of Department for Research 2017 – 2021
University of Copenhagen

- Strategic development and follow-up, including international evaluation processes
- Advisory role to senior management on research strategy, resource allocation, and organisational development
- Preparation of scenario analyses and decision briefs for leadership
- Coordination of cross-organisational initiatives and research collaborations

Section and Research Group Leader 2016 – 2021
University of Copenhagen

- Personnel responsibility including performance reviews (MUS)
- Recruitment and retention of researchers; support for early-career researchers
- Budget responsibility and resource management for research group

Associate Professor 2007 – 2016
Aarhus University
Research on Danish mathematics 1850–1970.

Postdoc 2003 – 2007
University of Agder (Norway) & Utrecht University (Netherlands)

Research on the development of mathematics in the 19th century and in Scandinavia since 1850.

Student Programmer

1994 – 1998

Centre for Labour Market Studies, Aarhus

System administration and data processing of economic-demographic datasets (SAS).

Education

PhD, History of Mathematics

1998 – 2002

Aarhus University

Dissertation on the development of mathematics in the 19th century; focus on Niels Henrik Abel.

MSc, Mathematics & Computer Science

1992 – 1998

University of Copenhagen

Specialisation in combinatorics and computational mathematics (C/C++).

Courses & Continuing Education

In progress (2026)

- AI for Business Specialization (Wharton School, University of Pennsylvania)
- Microsoft Power BI Data Analyst Professional Certificate
- Google Project Management Professional Certificate

Completed

- Research Leadership (University of Copenhagen, 2017)
- Leadership Course (Aarhus University, 2014)
- PhD supervision and didactics (multiple courses, 2000–present)

Awards & Recognition

- **Montucla Prize 2009** — International Commission on the History of Mathematics: Best article by a young researcher published in *Historia Mathematica* 2005–2008

Technical Skills

Python ●●●●●●●○ *Advanced (10+ years)*

SQL ●●●●○○○○ *Proficient (historical)*

C/C++ ●●●●●●●○ *Solid (20+ years)*

LaTeX ●●●●●●●○ *Expert (25+ years)*

AI/ML: LLM integration, computer vision, scikit-learn, pandas, prompt engineering, Claude API

Web & APIs: Flask, FastAPI, RESTful APIs, Google/Bing APIs, arXiv, DOI lookup

Infrastructure: Linux/Ubuntu, Apache, Git

Languages & Communication

Danish ●●●● *Native*

English ●●●○ *Fluent (academic + technical)*

Norwegian ●●○○ *Good comprehension (reading/speaking)*

Communication: TV, radio, newspapers, public lectures, research outreach

Publications: 80+ peer-reviewed articles, 7 books ([see website](#))

References and further information available on request.