

CV

Name: Sondre Sæther Bolland
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Nationality: Norwegian
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Occupation: PhD Candidate, Department of Informatics,
University of Bergen



Education

- Ongoing **PhD in Computer Science Didactics**
Department of Informatics, University of Bergen
- 2021 **Master's in Informatics** specialising in Logic.
Department of Informatics, University of Bergen
- 2019 **Bachelor's in Cognitive Science** specialising in Informatics.
Department of Information Science and Media Studies, University of Bergen

My research interests are centred around improving programming instruction in higher education. Specifically, my projects focus on assessing student prior knowledge and integrating this knowledge into how introductory programming courses are taught. Additionally, I investigate the importance of the *sense of belonging* within the computer science field. I explore how students' effort, attrition, performance, and engagement are influenced by their sense of belonging to their peers, institution, and faculty.

PhD Project

I lead the project ***PIKA: Prior Informatics Knowledge Assessment*** - an international initiative mapping students' prior programming knowledge before they enter higher education. PIKA is an assessment tool developed by me and "Introduction to Programming" instructors across Norway and Sweden. In 2024, it was distributed to 3,260 students at nine institutions.

Research Projects

- Ongoing **Bridging or Breaking? The Role of Language in Scientific Progress**
Stage: Writing
Author: Sondre S. Bolland
- Concept Dependency in CS1 using Knowledge Space Theory**
Stage: Data collection ongoing
Author: Sondre S. Bolland & Hans Georg Schaathun

- 2025 **How Introduction of Programming to the K-12 Curriculum Influences Prior Knowledge for CS1** (*pending review*)
Authors: Sondre S. Bolland & Torstein J. F. Strømme
- 2024 **Fundamentals of Norwegian CS1** ([publication](#))
Authors: Sondre S. Bolland, Aleksandr Popov, Tyra F. Eide, Robert Kordts & Torstein J. F. Strømme
- The Nordic Prior Knowledge Test in Programming: Motivation, Development and Preliminary Results** ([publication](#))
Authors: Sondre S. Bolland, Andreas Haraldsrud, Siri M. Jensen, Filip Strömbäck, Arne Styve, Erlend Tøssebro, Eirik Valseth, & Torstein J. F. Strømme
- Exploring the Consequences of Single-Assessment Grading in Higher Education** ([pdf](#))
Author: Sondre S. Bolland
Paper presented at the [University of Bergen Learning Conference 2024](#)
- 2023 **The Nordic Prior Knowledge Test in Programming 2023** ([report](#))
Author: Sondre S. Bolland
Report results presented at the Norwegian ICT Conference for Research and Education 2023.
- What challenges do the students face in introductory-STEM courses, and how can instructors help?** ([publication](#))
Authors: Sondre S. Bolland, Emili Rønning, Tiril Try, Sehoya Cotner, Kjersti Daae & Mirjam Glessmer.
Paper presented at MNT 2023 as key-note.
- Mandatory or Voluntary Coursework in Introductory Programming Courses?** ([publication](#))
Authors: Sondre S. Bolland, Tyra F. Eide & Torstein J. F. Strømme.
- 2022 **Addressing Incoming Students with Prior Programming Experience: Do they need CS1?** (*Study without write-up*)
Author: Sondre S. Bolland.
Study presented for *The National Academic Council for ICT*.
- 2021 **Expressing Unknown Instance Relations in Program Synthesis using Neurosymbolic Methods** ([master thesis](#))
Author: Sondre S. Bolland.
Supervisor: Michal Walicki.

Introduksjonsdag for gruppeledere i informatikk: hvilke tema bør adresseres? ([pdf](#), *not published*)

Authors: Torstein J. F. Strømme, Sondre Bolland, Crystal C. Din, David Grellscheid, Eirik R. Torsheim & Martin Vatshelle.

Study presented in a poster session at the Norwegian ICT Conference for Research and Education 2021.

- 2019 **The ALIENS Study: Using Artificial Intelligence in Neonatal Sepsis**
(*project terminated*)
Can exposure to antibiotics be reduced with the aid of Bayesian Networks?
Project leader: Jobin K. Varughese.
Research collaboration with Helse Førde HF, Helse Stavanger HF,
Universitetssykehuset Nord-Norge HF, University of Bergen, Helse Bergen HF
& Helse Fonna HF.

Academic Activities

- 2025 **Program Committee Member** [FSE 2025](#)
- 2024 **Hosting the ICT Research School Annual Meeting 2024**
Three day gathering of 40 PhD candidates and five invited speakers.
Budget: 300 000 NOK
- 2023 – 2024 **Hva vil DU bli?**
Presented the field of Informatics to secondary school children.

Work Experience - Academia

- 2022 – 2026 **PhD Candidate** with the Didactics research group, Department of Informatics, University of Bergen
- 2021 - 2022 **Scientific Assistant** with the Didactics research group, Department of Informatics, University of Bergen (*reference pending*)

Teaching, technical development and research aid.
- 2017 - 2021 **Teaching Assistant** at the University of Bergen in the following courses:
- *Object-oriented Programming*, [2020](#) & [2021](#)
 - *Introduction to Programming*, [2017](#) & [2020](#)
 - *Introduction to Machine Learning*, [2020](#)
 - *Basic Algorithms in Artificial Intelligence*, [2018](#) & [2019](#)
 - *Introduction to the Cognitive Sciences*, [2018](#)
- As part of my teaching responsibilities, I engaged in a diverse range of activities. These encompassed delivering lectures, assessing student work,

facilitating seminars, creating examinations, and developing educational materials.

Lecturer for [Tekna](#) in the following subjects:

- *Introduction to Programming*, [2021](#) & [2022](#)
- *Object-oriented Programming*, [2022](#)

Crash courses lasting between four and six hours.

Informatics Oracle at the Department of Informatics, University of Bergen ([reference](#))

Academic aid and waffle production. Help students with any academic questions in numerous subjects while making waffles.

Private Tutor at Privatundervisningen AS ([reference](#))

Tutoring high school students in social, theoretical and science mathematics.

Work Experience – Other

2016 - 2017 **Shift Leader** at Burger King Sartor ([reference](#))

2015 - 2016 **Military Service** in the northern brigade of Norway (2. Battalion) ([service statement](#))

2013 - 2015 **Cashier, Drive-thru & Maintenance** at McDonalds Tiller ([reference](#))

2009 - 2011 **Paper Delivery** at Byavisa AS

Other Positions and Activities

2023 – 2025 **Department Council Representative** (*elected, two terms*), Department of Informatics, University of Bergen

2023 – 2024 **Substitute Faculty Board Representative** (*elected*), Faculty of Mathematics and Natural Sciences, University of Bergen

2024 **Quiz Master** at Programmerbar, University of Bergen

2023 - 2024 **Quiz Master** at Integrerbar, University of Bergen

Languages

- Norwegian: Native
- English: Fluent
- Spanish: [A1](#)

Miscellaneous

- Hobby pianist ([video clip](#))
- Unofficial world record in stair climbing ([Strava activity](#))