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Anna Eilertsen

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CORE SKILLS

- Java (development, teaching, analysis, Maven, JUnit)
- Refactoring (correctness, repository mining, tool design, usability)
- IDE Plugin Development (Eclipse, IntelliJ, Visual Studio Code)
- Human-centric design of software engineering tools (user studies, productivity)
- Outreach, supervision, mentoring, committee work, reports, documentation, communication

EDUCATION

University of Bergen, **Ph.D. in Computer Science**   Oct. 2016 - Dec 2021
> Thesis title: *Improving the Usability of Refactoring Tools for Software Change Tasks*
> Partially conducted at University of British Columbia, hosted by Dr. Gail Murphy, 2018-2019

University of Bergen, **M.S. in Software Engineering** (3.8 GPA, thesis grade A)   Aug. 2014 - Jun. 2016
> Thesis title: *Making Software Refactorings Safer*
> Joint degree with University College of Western Norway

University of Bergen, **B.S. in Computer Science** (3.4 Major / 3.3 Overall GPA)   Aug. 2011 - Jun. 2014

SELECTED EMPLOYMENT

Norwegian Agency for Quality Assurance in Education   May 2021 - Nov 2021

Subject expert for Informatics for Ph.D. Program Accreditation Committee

- Evaluated application for approval of a Ph.D. program in information technology
- Moderated dialogue between the committee and the educational institution
- Collaborated to reach final consensus and recommendations and write final reports

University of Bergen

Teaching Assistant (TA) & Examiner   2013 - 2020

Supported teaching and exam activities in undergraduate and graduate-level Computer Science courses.

Example TA Tasks | **Introduction to Object-Oriented Programming** (INF101) | 450 students   2020

- Developed weekly exercises (up to 3000 LOC) and two larger term projects (up to 11K LOC).
- Exercises illustrate concepts like abstraction, data structures, Test-Driven Development
- Create programming solutions, course notes, lectures, and exam exercises.
- Develop well-written Java code, documentation, and comprehensive JUnit test suites for the students to track their progress and test their system requirements.
- Manage and mentor teams of up to 12 junior TAs, aid with code reviews, guide their student interactions, git problems, and in their grading and their feedback on student solutions.

Research Fellow   2016 - 2021

Participated in various research projects, course-related activities, supervision, and outreach.

Example Research Project | **Refactoring tool Usability**

- Technologies: Java, Python, Gradle, Google Sheets Scripting, LaTeX, git, Dataverse, Typescript, GitHub repository mining with RefactoringMiner and Java git API.
- Developed a proof-of-concept stepwise (Java) refactoring tool as an IntelliJ plugin.
- Built (Java) software system to study developers' approaches to software change tasks.
- Developed custom transcription plugin (in Typescript) for Visual Studio Code.
  Part of this work was conducted as a Visiting Research Student at the SPL lab at the University of British Columbia, hosted by Dr. Gail Murphy.

*Example Research Projec*t | **API/Client Co-Evolution**

- Technologies: ASM bytecode analysis library, Jena and Graal, SPARQL, Maven
- Used semantic web technology to analyze API/Client co-evolution in Java programs.

Co-Supervisor of Master's students

Example Master's project | **Enhancing Error Messages for Novices in Computer Science Education**
- M.S. student Sigrid Brækken, graduated in 2019
- Conducted weekly mentorship meetings throughout 2018-2019
- Guided students' research of novices' experiences with Python error messages
- Mentored the student in planning, executing, analyzing, and writing up research studies

Outreach & organizer   2013 - 2015

Involved in various outreach projects at UiB during my Bachelor's degree.

Example Outreach Project | **Nerding for Newbies**
     Created and executed courses in programming for high school students.

Example Outreach Project | **JenteJava**
     Started a gender initiative to retain students and obtained funding for employing programming
     mentors. The initiative became known for increasing female retention rates and since transitioned
     into a different gender initiative program under the student organization Echo.

KNOWIT Solutions Bergen

Software Developer Intern   Jun. 2015 - Aug. 2015
- Technologies: C#, Xamarin, iOS, Agile development, Scrum
- Developed digital signature solution for secure signatures on loan applications on iPad.

OTHER PROJECTS

Master's project | **Refactoring tool Correctness**   *2015-2016*
- Implemented an Eclipse plugin that extends Java refactorings with dynamic correctness checks.

Global Game Jam | **Clippy the Game**   2015
- Developed 3D game in Unity during Global Game Jam (48 hours).

Course project: Agent Technologies | **Labyrinth Game Solving Agent**   2014
- Developed AI for solving dungeon exploration games using rule-based agent programming.

Course project: Machine learning and Advanced Algorithms | **Text Recognition**   2014
- Developed text recognition algorithms using artificial neural networks.

Course project: Language Translation | **A Prolog Type Checker for Featherweight Java**   2013
- Implemented a type checker for a lightweight version of Java using declarative rules in Prolog.

SERVICE

2021 Panelist on Women in STEM Panel by Simula Bergen and Echo, *Bergen, Norway*
2021 Automated Software Engineering (ASE), Program Committee - NIER Track, *Melbourne, Australia*
2020 Automated Software Engineering (ASE), Program Committee - NIER Track, *Melbourne, Australia*
2020 Booster Conference Committee, *Bergen, Norway*
2020 International Conference on Software Engineering (ICSE), External Reviewer, *Seoul, South Korea*
2018 Software Language Engineering (SLE), Artifact Evaluation Committee, *Boston, USA*
2017 SPLASH conference, Student Volunteer, *Vancouver, Canada*
2016 Seminar Series on Advanced Techniques & Tools for Software Evolution, Local Chair, *Ber., Norway*
2016 Generative Programming: Concepts & Experiences (GPCE), External Reviewer, *Amst., Netherlands*
2016 Software Language Engineering (SLE), External Reviewer, *Amsterdam, Netherlands*
2016 - 2017 Organizer Girl Geek Dinners Bergen, Career network for women in IT, *Bergen, Norway*
2014 Curriculum Committee, Institute for Informatics, *University of Bergen, Norway*
2013 - 2015 Treasurer and organizer, Student Committee, *Institute for Informatics, UiB, Bergen, Norway*

HOBBIES | Climbing, hiking, skiing, board games, lindy hop dancing.