

MELISSA R DALE

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EDUCATION

Michigan State University

2016 – 2022

PhD in Computer Science:

Computer Vision, Medical Imaging, and Deep Learning

Montana State University

PhD Candidate: Computer Science

2014 – 2016 (Transferred)

Graduate Statistics Certificate

Master of Science: Computer Science

2011 – 2014

Undergraduate:

2006 – 2011

Magna Cum Laude from Honors College

BS in Computer Science

BA in Modern Languages

Minor in Physics

Veritas University (Costa Rica)

Summer 2007

Intermediate Spanish II, Costa Rican History and Culture

PUBLICATIONS AND PROJECTS

Impacts of Design Pattern Decay on System Quality

ESEM 2014

Dale M., Izurieta C., "Impacts of Design Pattern Decay on System Quality," 8th ACM-IEEE International Symposium on Empirical Software Engineering and Measurement, ESEM 2014, Torino, Italy, September 2014.

Project: Grime Injector

MSU 2014

Tool created in Java to model the accumulation of code unrelated to a design pattern. In depth documentation can be found: <http://www.cs.montana.edu/~mdale/grime-injector>, including links to the GitHub containing the code.

WORK EXPERIENCE

Research Assistant: iProBe lab at Michigan State University

2016 – Present

I am studying deep learning and how to overcome challenges such as small sample sizes and non-standard image dimensions through transfer learning. My current project is with the radiology department. We are working to better detect stem cells in MRI images, and create a tool for experts to contribute data to the limited sample sizes, empowering future research into online deep learning.

Teaching Assistant: Montana State University, Michigan State University

2012 – Present

Classes: CS 145 Web Design, CSCI 111 Introduction to Java, CSCI 132 Data Structures and Algorithms, CSE 232 Introduction to Programming II. In addition to the review of these foundation topics, this has been an opportunity to work on patience, technical communication, a deeper understanding of topics covered in these classes, and experience reviewing and fixing student code containing bugs.

Research Assistant: Software Engineering Laboratories MSU.

2011 – 2016

My research is focused on investigating design architectures such as design patterns and the role they play in software quality. This includes research in how these architectures and their decay may influence technical debt. From my research, I have had the opportunity to explore using multiple languages including python, Java, and Statistical R.

Instructor: Montana State University**2015 – 2016**

Classes CSCI 246 Discrete Mathematics, CSCI 215 Social and Ethical Issues in Computing. For these classes, in addition to refreshing myself on the subject matter, I compile lesson plans, homework, quizzes and tests, and projects to help others learn it well.

XBRL Services Software Engineer Intern: Webfilings (currently Workiva)**2013-2014**

As an intern, I was given my own project to work on that involved changing over an entire system of legacy code into much more efficient and maintainable code. I was able to transform over 30 classes with an average of 332 lines of code each into 2 classes with fewer than 100 lines of code total. Execution of this refactor was so efficient that an entire server was no longer required, and it allowed the product to be greatly extended to include new functionality and features that the legacy code could not have supported. On this job, I was exposed to XBRL, Java, and Python.

Development Intern: RightNow Technologies (currently Oracle RightNow)**2010-2011**

For this internship, I was able to apply my computer science skills in industry for the first time. I learned team dynamics, communication in the technical industry, and I was exposed to version control for the first time. My key contributions were bug fixes in the core product code, including C, C#, C++, and PHP.

ACHIEVEMENTS AND AWARDS**Dean’s Choice Award****2018**

Women in Engineering and MSU Federal Credit Union come together to award a deserving woman graduate student a scholarship. Funds were used to attend Grace Hopper Celebration conference in 2018.

Montana State University – Outstanding Teaching Assistant**2015**

Every year, Montana State University chooses one teaching assistant to award the title of “Outstanding TA”.

Montana State University – Computer Science Research Poster Competition - 3rd Place**2014**

MSU CS graduates display posters highlighting their research. Alumni and industry affiliates vote on best poster.

Women in Engineering Celebration Panelist**2013**

Every year the Women in Engineering Advisory Board hosts a dinner celebrating women in engineering. A panel of successful women across engineering industries and academia come together to answer questions and share advice they’ve learned along the way.

MSU Alumni & Bozeman Chamber of Commerce Award for Excellence**2011**

Awarded to MSU’s top 40 graduating seniors. *These students exemplify outstanding records of achievement in academics, extracurricular activities and service to the MSU and local, regional or global communities.*

ACTIVITIES**Workshops and Camps celebrating Women in Computer Science.****2016-Present**

Introduce girls to the exciting world of biometrics, including illustrating the importance/impacts of biometrics in our world.

- 2017-Present: Introduce a Girl to Engineering
- 2016-Present: Girls in STEM Day
- 2011-2014: Montana Apprenticeship Program
- 2011-2014: Peaks and Potentials
- 2011-2014: Expanding Your Horizons

R-Ladies**2018 – Present**

East Lansing R-Ladies organized in summer of 2018 and work to help each other learn and grow using statistical R for data analysis and visualization. *R-Ladies is a worldwide organization whose mission is to promote gender diversity in the R Community.*

First Lego League Referee**2010 – 2016**

Referee and score state Lego robotics competition. This involves prior training and outside study to learn the rules and regulations.