UNIVERSITY of GUELPH

ONTARIO AGRICULTURAL COLLEGE

DEPARTMENT OF ANIMAL BIOSCIENCES

MSc Defence

Applying machine learning to predict future milk production in dairy cows

Braeden Fieguth

Date: Friday July 25, 2025 at 9:00am

The PhD Defence for Braeden Fieguth has been scheduled for July 25, 2025 at 9:00am. The defence will be held online via Teams and in room ANNU 141: https://teams.microsoft.com/l/meetup-join/19%3ameeting_M2EzYzA1ZTctOTRmMC00NWRkLWEzMjktMGQyYzk2NzE1MDE2%40thread.v2/0?context=%7b%22Tid%22%3a%22be62a12b-2cad-49a1-a5fa-85f4f3156a7d%22%2c%22Oid%22%3a%22dfbebf32-99ae-4022-a68f-422f93e11c7f%22%7d

Examining Chair: Dr. Michael Steele

Advisor: Dr. John Cant

Advisory Committee Member: Dr. Dan Tulpan

Additional Committee Member: Dr. Vern Osborne

Abstract:

This thesis comprises three main chapters. First, a literature review explores fundamental machine learning concepts, common linear regression algorithms and optimization techniques. Second, it introduces "Brisk," a Python package developed to make machine learning more accessible for non-computer science users, detailing its motivations, usage, and a practical case study. Finally, the thesis presents two machine learning models developed for a decision support system. These models predict day-305 milk yield at 60 days in milk. These models aim to identify cows suitable for an extended lactation management strategy.