Notice of the Final Oral Examination
for the Degree of Master of Science

of

NATHAN VANDENBERG

BSc (University of Victoria, 2011)


Department of Computer Science

Friday, December 9, 2016
11:00 A.M.
Engineering and Computer Science Building
Room 468

Supervisory Committee:
Dr. Yvonne Coady, Department of Computer Science, University of Victoria (Co-Supervisor)
Dr. Ian Barrodale, Department of Computer Science, UVic (Co-Supervisor)
Dr. Maycira Costa, Department of Geography, UVic (Outside Member)

External Examiner:
Dr. Stephen Neville, Department of Electrical and Computer Engineering, UVic

Chair of Oral Examination:
Dr. Christopher Lalonde, Department of Psychology, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies
Abstract

The Salish Sea is an ecologically important coastal region located on the southwest part of British Columbia. Optical measurements were taken using a set of hyperspectral radiometers, the SAS Solar Tracker, installed on the Queen of Oak Bay ferry, that runs between Nanaimo and Vancouver, as part of the Ferry Ocean Colour Observation Systems (FOCOS) project. We developed a computer program to process the sensor data and generates level 4, remote sensing reflectance (Rrs) values. This performs similar functions to Satlantic Prosoft. However, we added new features such as an additional preprocessing step to filter the data based on longitude, and new meteorological flag and wind speed calculations during level 4. The system was tested using Pearson correlation to compare our output with the output from Satlantic Prosoft. Testing helped us identify a few issues, such as adding longitude flags to filter out data contaminated by land signal due to the ferry being too close to port. And another issue where the SAS Solar Tracker does not update its pointing angle fast enough when the ferry makes sharp turns resulted in glint contaminated data.