University of Victoria | Graduate Studies

Notice of the Final Oral Examination
for the Degree of Doctor of Philosophy

of

GORKEM CIPLI

MEng (Yildiz Technical University, 2007)
BSc (Yeditepe University, 2004)

"Underwater Audio Event Detection, Identification and Classification Framework (AQUA)"

Department of Electrical and Computer Engineering

Thursday, December 15, 2016
9:00 A.M.
Engineering and Computer Science Building
Room 660

Supervisory Committee:
Dr. Peter Driessen, Department of Electrical and Computer Engineering, University of Victoria (Co-Supervisor)
Dr. Farook Sattar, Department of Electrical and Computer Engineering, UVic (Member)
Dr. Wyatt Page, Department of Electrical and Computer Engineering, UVic (Member)
Dr. George Tzanetakis, Department of Computer Science, UVic (Outside Member)

External Examiner:
Dr. Suleyman Gokhun Tanyer, Department of Electrical-Electronics Engineering, Baskent University

Chair of Oral Examination:
Dr. Bernie Pauly, School of Nursing, UVic

Dr. David Capson, Dean, Faculty of Graduate Studies

Abstract

An audio event detection and classification framework (AQUA) is developed for the North Pacific underwater acoustic research community. AQUA has been developed tested and verified on Ocean Networks Canada (ONC) hydrophone data. AQUA enables the processing of the large acoustic database that grows at 5 GB per day. Novel algorithms to overcome challenges such as activity detection in broadband non-gaussian type noise have achieved accurate and high classification ratios. The main AQUA modules are blind activity detector, denoiser and classifier. The AQUA algorithms yield promising classification results with accurate time stamps.