

Computer Science Seminar Series, 2010

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A Case Study of Using Domain Engineering for the Conflation Algorithms Domain

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Abstract

In this study we used domain engineering as a method for gaining deeper formal understanding of a class of algorithms. Specifically, we analyzed 6 stemming algorithms from 4 different sub-domains of the conflation algorithms domain and developed formal domain models and generators based on these models. The application generator produces source code for not only affix removal but also successor variety, table lookup, and n-gram stemmers. The performance of the generated stemmers was compared with the stemmers developed manually in terms of stem similarity, source, and executable sizes, and development and execution times. Five of the stemmers generated by the application generator produced more than 99.9% identical stems with the manually developed stemmers. Some of the generated stemmers were as efficient as their manual equivalents and some were not.

Biography

Dr. Okan Yilmaz received his Bachelor of Science and Master of Science degrees in computer engineering and information science from Bilkent University, Ankara, Turkey. Recently he received his Ph.D. degree in Computer Science from Virginia Tech. His research interests include software engineering, wireless communications, multimedia, and mobile computing. Currently he works at NeuStar Inc. as a Systems Architect.