

講座公告・歡迎參加

新世代技術專題演講 — Deep Sparse Coding Based Recursive Disaggregation Model for Water Conservation

一、日期：104 年 7 月 22 日（星期三）14:00—16:00

二、地點：國立雲林科技大學工程二館（電機館）EL126 演講廳

三、承辦單位：國立雲林科技大學電機工程系暨研究所、教學卓越中心

摘要	<p>The increasing demands on drinkable water, along with population growth, water-intensive agriculture and economic development, pose critical challenges to water sustainability. New techniques to long-term water conservation that incorporate principles of sustainability are expected. Recent studies have shown that providing customers with usage information of fixtures could help them save a considerable amount of water. Existing disaggregation techniques focus on learning consumption patterns for individual devices. Little attention has been given to the hierarchical decomposition structure of the aggregated consumption. In this talk, I will present a Deep Sparse Coding based Recursive Disaggregation Model (DSCRDM) for water conservation. This model incorporates a recursive decomposition structure to perform the disaggregation task. An efficient and effective algorithm is developed to automatically learn the disaggregation architecture, along with discriminative and reconstruction dictionaries for each layer. We demonstrated that our proposed approach significantly improved the performance of the benchmark methods on a large scale disaggregation task and illustrated how our model could provide practical feedbacks to customers for water conservation.</p>
講者簡歷	<div></div> <p>Dr. Chang-Tien Lu is an Associate Professor in the Department of Computer Science at Virginia Polytechnic Institute and State University. He served as Program Co-Chair of the 18th IEEE International Conference on Tools with Artificial Intelligence in 2006 and as General Co-Chair of the 20th IEEE International Conference on Tools with Artificial Intelligence in 2008 and the 17th ACM SIGSPATIAL International Conference on Advances in Geographic Information Systems in 2009. He was elected to serve as Vice Chair of the ACM Special Interest Group on Spatial Information (ACM SIGSPATIAL) during 2011-2014. Dr. Lu's research work focuses on emerging requirements for analyzing, retrieving, and visualizing massive scientific data. His ongoing projects range from explorations of fundamental access issues to practical applications that deal with data analysis and knowledge discovery tasks. His research has been sponsored by the National Science Foundation, National Institutes of Health, Department of Defense, Virginia Transportation Research Council, and District Department of Transportation. He received a PhD in Computer Science from the University of Minnesota at Twin Cities. More details are available at http://www.cs.vt.edu/~ctlul/</p>

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