



ขอเชิญอาจารย์ นักศึกษา และผู้สนใจ เข้าฟังการสัมมนาแลกเปลี่ยนเรียนรู้ทางคณิตศาสตร์

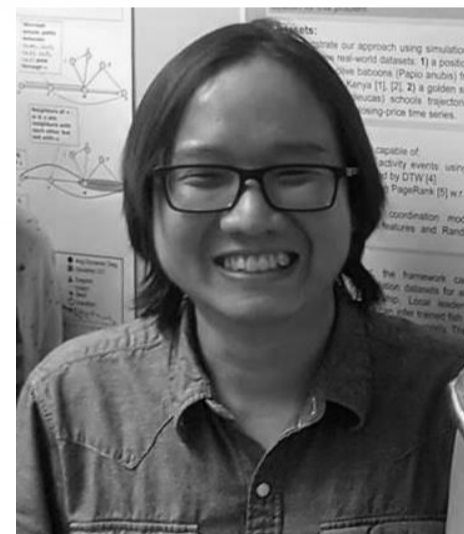
โครงการสัมมนาแลกเปลี่ยนเรียนรู้ MATH SCIENCE CMU COLLOQUIUM



Inference of Leadership of Coordinated Activity in Time Series

When a group of people decides to move somewhere together, who is the initiator who starts moving and everyone follows? Do the group members follow friends around them or do they prefer to follow specific individuals? These questions are about leadership. Leadership plays a key role in social animals', including humans', decision-making and coalescence in coordinated activities such as hunting, migration, sport, diplomatic negotiation, etc. In these coordinated activities, leadership is a process which organizes interactions among members to make a group achieve collective goals. Understanding initiation of coordinated activities allows scientists to gain more insight into social species' behaviors. However, by using only the data on time series of activities, inferring leadership, as manifested by the initiation of coordinated activities, faces many challenging issues. First, there is no fundamental concept to describe these activities computationally. Second, coordinated activities are dynamic. Third, several different coordinated activities may occur simultaneously among subgroups. To fill these remaining gaps in leadership inference, we formalize several computational leadership problems and propose methodologies to solve them.

We evaluate and demonstrate the performance of the proposed frameworks in both simulated and real-world datasets, such as baboon trajectories, time series of fish movement as well as time series of closing price of stock market. The frameworks perform better than non-trivial baselines in both simulated and real-world datasets. Our problem formalization and frameworks enable opportunities for scientists to analyze coordinated activities and generate scientific hypotheses about collective behaviors that can be tested statistically and in the field.



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วันอังคารที่ 15 มกราคม พ.ศ.2562

เวลา 14.30 – 15.30 น.

ณ ห้องประชุม 1 ภาควิชาคณิตศาสตร์

January 15 (Tue), 2019

14.30 – 15.30

Location: Meeting Room 1, Math Dept.

Organized by: Department of Mathematics, Faculty of Science, Chiang Mai University

จัดโดย ภาควิชาคณิตศาสตร์ คณะวิทยาศาสตร์ มหาวิทยาลัยเชียงใหม่

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