

Faculty and Research Interests

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EDUCATION:

- 2001 – Ph.D. in Computer Science, New York University
- 1991 – Bachelor in Mathematics, National Taiwan University

EXPERIENCE:

- 2011 – now Associate Professor, National Taiwan University of Science and Technology
- 2003 – 2011 Assistant Professor, National Taiwan University of Science and Technology
- 2003 Researcher, Vita Genomics, Inc.
- 2001 – 2003 Post-doc Research Fellow, University of Delaware

INTEREST:

Machine Learning, Data Analytics, Information Security, Computer Vision.

CURRENT PROJECTS:

- **Distributed Anomaly Detection Systems for M2M Applications** (cooperation with Intel and NTU)
 - ✓ Smart continuous sensing and monitoring
 - ✓ Ensemble methods and data fusion
 - ✓ Applications to Intelligent Care Systems, Smart environment, & Intelligent Transportation Systems
- **Big data analytics and system design**
 - ✓ Machine learning algorithm acceleration and enhancement in Hadoop/MapReduce framework
 - ✓ Large-scale spatio-temporal modeling
- **Behavior-based User Verification and Recognition** (cooperation with IIS, Academia Sinica)
 - ✓ Trajectory-based user verification and recognition
 - ✓ Multiple factor user verification
 - ✓ Game bot detection
- **Information Security** (cooperation with III, Trend Micro)
 - ✓ Malicious URL detection
 - ✓ Malware detection
- **Graph Mining and Stream Mining** (cooperation with Carnegie Mellon University, U.S.A.)
 - ✓ Belief propagation applied for large-scale graphs
 - ✓ Stream mining applied in intrusion detection systems

A Common Foundation: Smart Continuous Sensing & Monitoring

Sensing: collecting data to understand space around collectors
Monitoring: state checking and outlier/anomaly detection

Distributed Anomaly Detection Systems For M2M Applications

Spatio-temporal Modeling

Accident Detection & Traffic State Monitoring

Malicious URL Detection

Trajectory-Based User Verification

$$\mathcal{M}_{D_m D_b}(s) = \frac{K(s | D_m) - K(s | D_b)}{K(s | D_m) + K(s | D_b)}$$