

Xiaojun Chang

COMPUTER VISION · MACHINE LEARNING · MULTIMEDIA

25 Exhibition Walk, Level 2, Room 208, Clayton Campus Monash University, VIC 3800, Australia

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“Make the change that you want to see in the world.”

Education

Centre for Quantum Computation and Intelligent Systems, University of Technology Sydney

Sydney, Australia

PH.D IN COMPUTER SCIENCE

Jul. 2015 - Aug. 2016

- Supervisor: Dr. Yi Yang [yi.yang@uts.edu.au]

School of Information Technology and Electrical Engineering, The University of Queensland

Brisbane, Australia

PH.D IN COMPUTER SCIENCE

Oct. 2012 - June. 2015

- Supervisor: Dr. Yi Yang [yi.yang@uts.edu.au]

College of Information Science and Technology, Northwest University

Xian, China

M.S. IN COMPUTER SCIENCE

Sep. 2008 - Jun. 2011

- Supervisor: Dr. Jun Guo [guojun@nwu.edu.cn]

Department of Physics, Northwest University

Xian, China

B.S. IN THEORETICAL PHYSICS

Sep. 2004 - Jun. 2008

- Supervisor: Dr. Zhengjun Zhang [zhangzj@nwu.edu.cn]

Employment History

Monash University

Melbourne, AU

LECTURER (A.K.A. ASSISTANT PROFESSOR) AND DECRA FELLOW

Dec. 2018 - Now

Carnegie Mellon University

Pittsburgh, US

POSTDOCTORAL RESEARCH ASSOCIATE

Aug. 2016 - Nov. 2018

Carnegie Mellon University

Pittsburgh, US

VISITING STUDENT

Mar. 2014 - Aug. 2016

Oracle Asia Research & Development Center

Beijing, China

SOFTWARE ENGINEER

Jul. 2011 - Sep. 2012

IBM China Development Lab

Beijing, China

SOFTWARE ENGINEER INTERN

Sep. 2009 - Jun. 2011

Selected Publications

JOURNAL [* indicates corresponding author]

Semantic Pooling for Complex Event Analysis in Untrimmed Videos

2016 IF: 8.329

XIAOJUN CHANG, YAO-LIANG YU, YI YANG AND ERIC P. XING

ESI Highly Cited, Hot

- IEEE Transactions on Pattern Analysis and Machine Intelligence, 39(8): 1617-1632, 2017.
- FoR code: 080101: 50%; 080104: 50%

Bi-Level Semantic Representation Analysis for Multimedia Event Detection

2016 IF: 7.384

XIAOJUN CHANG, ZHIGANG MA, YI YANG, ZHIQIANG ZENG AND ALEXANDER G. HAUPTMANN

ESI Highly Cited, Hot

- IEEE Transactions on Cybernetics, 47(5): 1180-1197, 2017.
- FoR code: 080101: 50%; 080104: 50%

Joint Attributes and Event Analysis for Multimedia Event Detection

2016 IF: 6.108

ZHIGANG MA, XIAOJUN CHANG*, ZHONGWEN XU, NICU SEBE AND ALEXANDER G. HAUPTMANN

- IEEE Transactions on Neural Networks and Learning Systems, DOI: 10.1109/TNNLS.2017.2709308, 2017.
- FoR code: 080101: 50%; 080104: 50%

The Many Shades of Negativity

ZHIGANG MA, **XIAOJUN CHANG***, YI YANG, NICU SEBE AND ALEX HAUPTMANN

- IEEE Transactions on Multimedia, 19(7): 1558-1568, 2017.
- FoR code: 080101: 50%; 080104: 50%

2016 IF: 3.509

ESI Highly Cited, Hot

Feature Interaction Augmented Sparse Learning for Fast Kinect Motion Detection

XIAOJUN CHANG, ZHIGANG MA, MING LIN, YI YANG AND ALEXANDER G. HAUPTMANN

- IEEE Transactions on Image Processing, 26(8): 3911-3920, 2017.
- FoR code: 080101: 50%; 080104: 50%

2016 IF: 4.828

ESI Highly Cited, Hot

Simple to Complex Cross-modal Learning to Rank

MINNAN LUO, **XIAOJUN CHANG***, ZHIHUI LI, LIQIANG NIE, ALEXANDER G. HAUPTMANN, AND QINGHUA ZHENG

- Computer Vision and Image Understanding, DOI: 10.1016/j.cviu.2017.07.001, 2017.
- FoR code: 080101: 50%; 080104: 50%

2016 IF: 2.498

Fast and Orthogonal Locality Preserving Projections for Dimensionality Reduction

RONG WANG, FEIPING NIE, RICHANG HONG, **XIAOJUN CHANG**, XIAOJUN YANG AND XUELONG LI

- IEEE Transactions on Image Processing, 26(10): 5019-5030, 2017.
- FoR code: 080101: 50%; 080104: 50%

2016 IF: 4.828

Beyond Trace Ratio: Weighted Harmonic Mean of Trace Ratios for Multiclass Discriminant Analysis

ZHIHUI LI, FEIPING NIE, **XIAOJUN CHANG** AND YI YANG

- IEEE Transactions on Knowledge and Data Engineering, DOI: 10.1109/TKDE.2017.2728531, 2017.
- FoR code: 080101: 50%; 080104: 50%

2016 IF: 3.438

Adaptive Unsupervised Feature Selection with Structure Regularization

MINNAN LUO, FEIPING NIE, **XIAOJUN CHANG***, YI YANG, ALEXANDER G. HAUPTMANN AND QINGHUA ZHENG

- IEEE Transactions on Neural Networks and Learning Systems, DOI: 10.1109/TNNLS.2017.2650978, 2017.
- FoR code: 080101: 50%; 080104: 50%

2016 IF: 6.108

An Adaptive Semisupervised Feature Analysis for Video Semantic Recognition

MINNAN LUO, **XIAOJUN CHANG***, LIQIANG NIE, YI YANG, ALEXANDER G. HAUPTMANN AND QINGHUA ZHENG

- IEEE Transactions on Cybernetics, DOI: 10.1109/TCYB.2017.2647904, 2017.
- FoR code: 080101: 50%; 080104: 50%

2016 IF: 7.384

ESI Highly Cited

Learning Multiple Diagnosis Codes for ICU Patients with Local Disease Correlation Mining

SEN WANG, XUE LI, **XIAOJUN CHANG***, LINA YAO, QUAN Z. SHENG AND GUODONG LONG

- ACM Transactions on Knowledge Discovery from Data 29(4): 1124-1150, 2017.
- FoR code: 080101: 50%; 080104: 50%

2016 IF: 1.895

Revealing Event Saliency in Unconstrained Video Collection

DINGWEN ZHANG, JUNWEI HAN, LU JIANG, SENMAO YE AND **XIAOJUN CHANG**

- IEEE Transactions on Image Processing 26(4): 1746-1758, 2017.
- FoR code: 080101: 50%; 080104: 50%

2016 IF: 4.828

ESI Highly Cited, Hot

Avoiding Optimal Mean L21-norm Maximization based Robust PCA for Reconstruction

MINNAN LUO, FEIPING NIE, **XIAOJUN CHANG**, YI YANG, ALEXANDER G. HAUPTMANN, QINGHUA ZHENG

- Neural Computation 29(4): 1124-1150, 2017.
- FoR code: 080101: 50%; 080104: 50%

2016 IF: 1.938

Semisupervised Feature Analysis by Mining Correlations among Multiple Tasks

XIAOJUN CHANG AND YI YANG

- IEEE Transactions on Neural Networks and Learning Systems, DOI: 10.1109/TNNLS.2016.2582746, 2016.
- FoR code: 080101: 50%; 080104: 50%

2016 IF: 6.108

Convex Sparse PCA for Unsupervised Feature Analysis

XIAOJUN CHANG, FEIPING NIE, YI YANG, CHENGQI ZHANG AND HENG HUANG

- ACM Transactions on Knowledge Discovery from Data 11(1): 3:1-3:16, 2016.
- FoR code: 080101: 50%; 080104: 50%

2016 IF: 1.895

Diagnosis Code Assignment Using Sparsity-Based Disease Correlation Embedding

SEN WANG, **XIAOJUN CHANG**, XUE LI, GUODONG LONG, LINA YAO AND QUAN Z. SHENG

- IEEE Transactions on Knowledge and Data Engineering 28(12): 3191-3202, 2016.
- FoR code: 080101: 50%; 080104: 50%

2016 IF: 3.438

Modeling Disease Progression via Multisource Multitask Learners: A Case Study With Alzheimer's Disease

2016 IF: 6.108

LIQIANG NIE, LUMING ZHANG, LEI MENG, XUEMENG SONG, **XIAOJUN CHANG** AND XUELONG LI

- IEEE Transactions on Neural Networks and Learning Systems, DOI: 10.1109/TNNLS.2016.2520964, 2016.
- FoR code: 080101: 50%; 080104: 50%

Multiview Physician-Specific Attributes Fusion for Health Seeking

2016 IF: 7.384

LIQIANG NIE, LUMING ZHANG, YAN YAN, **XIAOJUN CHANG**, MAOFU LIU, AND LING SHAO

- IEEE Transactions on Cybernetics, DOI: 10.1109/TCYB.2016.2577590, 2016.
- FoR code: 080101: 50%; 080104: 50%

Compound Rank-k Projections for Bilinear Analysis

2016 IF: 6.108

XIAOJUN CHANG, FEIPING NIE, SEN WANG, YI YANG, XIAOFANG ZHOU, CHENGQI ZHANG

ESI Highly Cited, Hot

- IEEE Transactions on Neural Networks and Learning Systems 27(7): 1502-1513, 2016.
- FoR code: 080101: 50%; 080104: 50%

Multi-Class Active Learning by Uncertainty Sampling with Diversity Maximization

2016 IF: 8.222

YI YANG, ZHIGANG MA, FEIPING NIE, **XIAOJUN CHANG**, AND ALEXANDER G. HAUPTMANN

ESI Highly Cited

- International Journal of Computer Vision 113(2): 113-127, 2015.
- FoR code: 080101: 50%; 080104: 50%

CONFERENCE

RCAA: Relational Context-Aware Agents for Person Search

ERA Rank A, CCF B

XIAOJUN CHANG, PO-YAO HUANG, YI-DONG SHEN, XIAODAN LIANG, YI YANG AND ALEX HAUPTMANN

- European Conference on Computer Vision, ECCV 2018.
- FoR code: 080101: 50%; 080104: 50%

Reinforcement Cutting-Agent Learning for Video Object Segmentation

ERA Rank A, CCF A

JUNWEI HAN, LE YANG, DINGWEN ZHANG, **XIAOJUN CHANG**, AND XIAODAN LIANG, CVPR 2018.

- IEEE International Conference on Computer Vision and Pattern Recognition, CVPR 2018.
- FoR code: 080101: 50%; 080104: 50%

Robust Top-k Multi-class SVM for Visual Category Recognition

ERA Rank A*, CCF A

XIAOJUN CHANG, YAO-LIANG YU AND YI YANG

- ACM SIGKDD International Conference on Knowledge Discovery and Data Mining, KDD 2017.
- FoR code: 080101: 50%; 080104: 50%

Complex Event Detection by Identifying Reliable Shots from Untrimmed Videos

ERA Rank A*, CCF A

HEHE FAN, **XIAOJUN CHANG**, DE CHENG, YI YANG, DONG XU, AND ALEXANDER G. HAUPTMANN

- IEEE International Conference on Computer Vision, ICCV 2017.
- FoR code: 080101: 50%; 080104: 50%

Exploring Consistent Preferences: Discrete Hashing with Pair-Exemplar for Scalable Landmark Search

ERA Rank A*, CCF A

LEI ZHU, ZI HUANG, XIAOJUN CHANG, JINGKUAN SONG, AND HENG TAO SHEN

- ACM International Conference on Multimedia, ACM MM, 2017.
- FoR code: 080101: 50%; 080104: 50%

Top-k Supervise Feature Selection via ADMM for Integer Programming

ERA Rank A*, CCF A

MINYU FAN, **XIAOJUN CHANG**, XIAOQIN ZHANG, DI WANG AND LIANG DU

- International Joint Conference on Artificial Intelligence, IJCAI 2017.
- FoR code: 080101: 50%; 080104: 50%

Discriminative Dictionary Learning With Ranking Metric Embedded for Person Re-Identification

ERA Rank A*, CCF A

DE CHENG, **XIAOJUN CHANG**, LI LIU, ALEXANDER G. HAUPTMANN, YIHONG GONG AND NANNING ZHENG

- International Joint Conference on Artificial Intelligence, IJCAI 2017.
- FoR code: 080101: 50%; 080104: 50%

How Unlabeled Web Videos Help Complex Event Detection?

ERA Rank A*, CCF A

HUAN LIU, QINGHUA ZHENG, MINNAN LUO, DINGWEN ZHANG, **XIAOJUN CHANG** AND CHENG DENG

- International Joint Conference on Artificial Intelligence, IJCAI 2017.
- FoR code: 080101: 50%; 080104: 50%

Self-paced Mixture of Regression

ERA Rank A*, CCF A

LONGFEI HAN, DINGWEN ZHANG, DONG HUANG, **XIAOJUN CHANG**, SENLIN LUO, JUN REN AND JUNWEI HAN

- International Joint Conference on Artificial Intelligence, IJCAI 2017.
- FoR code: 080101: 50%; 080104: 50%

Adaptive Semi-Supervised Learning with Discriminative Least Squares Regression

ERA Rank A*, CCF A

MINNAN LUO, LINGLING ZHANG, FEIPING NIE, **XIAOJUN CHANG**, BUYUE QIAN AND QINGHUA ZHENG

- International Joint Conference on Artificial Intelligence, IJCAI 2017.
- FoR code: 080101: 50%; 080104: 50%

Structure Regularized Unsupervised Discriminant Feature Analysis

ERA Rank A*, CCF A

MINGYU FAN, **XIAOJUN CHANG** AND DACHENG TAO

- Thirty-first Conference on Artificial Intelligence, AAAI 2017.
- FoR code: 080101: 50%; 080104: 50%

Probabilistic Non-negative Matrix Factorization and its Robust Extensions for Topic Modeling

ERA Rank A*, CCF A

MINNAN LUO, FEIPING NIE, **XIAOJUN CHANG**, YI YANG, ALEXANDER G. HAUPTMANN, AND QINGHUA ZHENG

- Thirty-first Conference on Artificial Intelligence, AAAI 2017.
- FoR code: 080101: 50%; 080104: 50%

Multi-view Correlated Feature Learning by Uncovering Shared Component

ERA Rank A*, CCF A

XIAOWEI XUE, FEIPING NIE, SEN WANG, **XIAOJUN CHANG**, BELA STANTIC AND MIN YAO

- Thirty-first Conference on Artificial Intelligence, AAAI 2017.
- FoR code: 080101: 50%; 080104: 50%

They Are Not Equally Reliable: Semantic Event Search using Differentiated Concept Classifiers

ERA Rank A, CCF A

XIAOJUN CHANG, YAO-LIANG YU, YI YANG AND ERIC P. XING

- IEEE Conference on Computer Vision and Pattern Recognition, CVPR 2016.
- FoR code: 080101: 50%; 080104: 50%

Dynamic Concept Composition for Zero-Example Event Detection

ERA Rank A*, CCF A

XIAOJUN CHANG, YI YANG, GUODONG LONG, CHENGQI ZHANG AND ALEXANDER G. HAUPTMANN

- Thirtieth Conference on Artificial Intelligence, AAAI 2016.
- FoR code: 080101: 50%; 080104: 50%

Avoiding Optimal Mean Robust PCA/2DPCA with Non-greedy L1-norm Maximization

ERA Rank A*, CCF A

MINNAN LUO, FEIPING NIE, **XIAOJUN CHANG**, YI YANG AND ALEXANDER G. HAUPTMANN

- International Joint Conference on Artificial Intelligence, IJCAI 2016.
- FoR code: 080101: 50%; 080104: 50%

Searching Persuasively: Joint Event Detection and Evidence Recounting with Limited Supervision

ERA Rank A*, CCF A

XIAOJUN CHANG, YAO-LIANG YU, YI YANG AND ALEXANDER G. HAUPTMANN

- ACM International Conference on Multimedia, ACM MM 2015.
- FoR code: 080101: 50%; 080104: 50%

Complex Event Detection using Semantic Saliency and Nearly-Isotonic SVM

ERA Rank A*, CCF A

XIAOJUN CHANG, YI YANG, ERIC P. XING AND YAO-LIANG YU

- International Conference on Machine Learning, ICML 2015.
- FoR code: 080101: 50%; 080104: 50%

Semantic Concept Discovery for Large-Scale Zero-Shot Event Detection

ERA Rank A*, CCF A

XIAOJUN CHANG, YI YANG, ALEXANDER G. HAUPTMANN, ERIC P. XING AND YAO-LIANG YU

- International Joint Conference on Artificial Intelligence, IJCAI 2015.
- FoR code: 080101: 50%; 080104: 50%

A Convex Formulation for Spectral Shrunk Clustering

ERA Rank A*, CCF A

XIAOJUN CHANG, FEIPING NIE, ZHIGANG MA, YI YANG AND XIAOFANG ZHOU

- Twenty-Ninth Conference on Artificial Intelligence, AAAI 2015.
- FoR code: 080101: 50%; 080104: 50%

A Convex Formulation for Semi-Supervised Multi-Label Feature Selection

ERA Rank A*, CCF A

XIAOJUN CHANG, FEIPING NIE, YI YANG AND HENG HUANG

- Twenty-Eighth Conference on Artificial Intelligence, AAAI 2014.
- FoR code: 080101: 50%; 080104: 50%

Uncovering Locally Discriminative Structure for Feature Analysis

ERA Rank A, CCF B

SEN WANG, FEIPING NIE, **XIAOJUN CHANG**, XUE LI, QUAN Z. SHENG AND LINA YAO

- European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, ECML/PKDD 2016.
- FoR code: 080101: 50%; 080104: 50%

Unsupervised Feature Analysis with Class Margin Optimization

ERA Rank A, CCF B

SEN WANG, FEIPING NIE, **XIAOJUN CHANG**, LINA YAO, XUE LI AND QUAN Z. SHENG

- European Conference on Machine Learning and Principles and Practice of Knowledge Discovery in Databases, ECML/PKDD 2015.
- FoR code: 080101: 50%; 080104: 50%

Grants

Australian Research Council

AUD 393,000

TOWARDS DATA-EFFICIENT FUTURE ACTION PREDICTION IN THE WILD

2019.01 - 2021.12

- **Xiaojun Chang**

Defense Advanced Research Projects Agency (DARPA)

AUD 4,606,216.00

LEARNING TO LEARN AND ADAPT WITH LESS LABELS

2019.01 - 2021.12

- Reza Haffari, **Xiaojun Chang**, Wray Buntine, Dinh Phung, Geoff Webb

The MITRE Corporation (Grant No. 113809)

USD 600,000

INTEGRATION AND TRANSITION OF ALADDIN VIDEO SOFTWARE

2016.09 - 2018.01

- Alexander G. Hauptmann, **Xiaojun Chang**, and Eric Riebling

National Natural Science Foundation of China (Grant No. 61702415)

CNY 220,000

COGNITIVE MODELLING OF HUMAN ACTIVITY WITH A VIEW-INVARIANT WORLD REPRESENTATION

2018.01 - 2020.12

- **Xiaojun Chang**

National Natural Science Foundation of China (Grant No. 61772310)

CNY 630,000

REPRESENTATION LEARNING FOR MICRO VIDEOS

2018.01-2020.12

- Liqiang Nie, **Xiaojun Chang**, *et al.*

National Natural Science Foundation of China (Grant No. 61772373)

CNY 610,000

STUDY OF THE KEY PROBLEMS IN SEMI-SUPERVISED LEARNING FOR LARGE SCALE HIGH DIMENSIONAL DATA

2018.01-2020.12

- Minyu Fan, **Xiaojun Chang**, *et al.*

Presentation

PEIYANG Forum - Tianjin University

Tianjin, China

PRESENTER FOR "SEMANTIC POOLING FOR COMPLEX EVENT ANALYSIS"

Dec. 2016

IEEE Conference on Computer Vision and Pattern Recognition

Las Vegas, US

PRESENTER FOR "SEMANTIC EVENT SEARCH USING DIFFERENTIATED CONCEPT CLASSIFIERS"

Jul. 2016

Thirtieth Conference on Artificial Intelligence, AAAI

Phoenix, US

PRESENTER FOR "DYNAMIC CONCEPT COMPOSITION FOR ZERO-EXAMPLE EVENT DETECTION"

Feb. 2016

ACM International Conference on Multimedia

Brisbane, Australia

PRESENTER FOR "SEARCHING PERSUASIVELY: JOINT EVENT DETECTION AND EVIDENCE RECOUNTING WITH LIMITED SUPERVISION"

Oct. 2015

International Joint Conference on Artificial Intelligence

Buenos Aires,
Argentina

PRESENTER FOR "SEMANTIC CONCEPT DISCOVERY FOR LARGE-SCALE ZERO-SHOT EVENT DETECTION"

Jul. 2015

International Conference on Machine Learning

Lille, France

PRESENTER FOR "COMPLEX EVENT DETECTION USING SEMANTIC SALIENCY AND NEARLY-ISOTONIC SVM"

Jul. 2015

Twenty-Eighth Conference on Artificial Intelligence

Québec, Canada

PRESENTER FOR "A CONVEX FORMULATION FOR SEMI-SUPERVISED MULTI-LABEL FEATURE SELECTION"

Jul. 2014

Professional Services

PROGRAM COMMITTEES

- 2017 - 17 **Program Committee**, International Joint Conference on Artificial Intelligence
- 2017 - 17 **Program Committee**, Thirty-first Conference on Artificial Intelligence
- 2017 - 17 **Program Committee**, ACM International Conference on Multimedia
- 2017 - 17 **Program Committee**, IEEE Conference on Computer Vision and Pattern Recognition
- 2016 - 17 **Program Committee**, Thirtieth Annual Conference on Neural Information Processing Systems
- 2016 - 17 **Program Committee**, ACM International Conference on Multimedia

REVIEWER

- 2016 - 17 **Reviewer**, IEEE Transactions on Pattern Analysis and Machine Intelligence
- 2017 - 17 **Reviewer**, IEEE Transactions on Image Processing
- 2017 - 17 **Reviewer**, IEEE Transactions on Multimedia
- 2016 - 17 **Reviewer**, IEEE Transactions on Knowledge and Data Engineering
- 2017 - 17 **Reviewer**, IEEE Transactions on Big Data
- 2016 - 17 **Reviewer**, Neural Computation
- 2016 - 17 **Reviewer**, IEEE Transactions on Neural Networks and Learning Systems
- 2014 - 17 **Reviewer**, Multimedia Tools and Applications
- 2015 - 17 **Reviewer**, Journal of Visual Communication and Image Representation
- 2016 - 17 **Reviewer**, Frontiers of Computer Science

Supervision

- | | | |
|----------------------|--|----------------------|
| 2016.08 -
2018.11 | Mr. Wenhe Liu , Ph.D student at University of Technology Sydney | <i>Co-Supervisor</i> |
| 2016 - | Mr. Xiaowei Zhao , Master student at Northwest University | <i>Co-Supervisor</i> |
| 2016 - | Mr. Zhi Li , Master student at Northwest University | <i>Co-Supervisor</i> |