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Home   **Researchers**   Research units   Research output

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Projects   Activities   Prizes   •••

Prof. Guanrong CHEN, 陳關榮

Director (CCCN), Centre for Complexity and Complex Networks
Chair Professor, **Department of Electrical Engineering**

Edit my profile

Phone	Email
+852 34427 922	eegchen@cityu.edu.hk
YEUNG-G6306	

h-index

ⓘ

107524
Scopus Citations

153
Scopus h-index

1986 ...   2026
Research activity per year

👤 Overview   🌀 Fingerprint   ⚛ Network   📖 Research output (1915)   📦 **Projects (26)**

🏆 Prizes (65)   📇 Press/Media (7)   •••

📦 Projects

Projects per year ⤢

2000   2026

⌃

4
Active

∠**2**
Finished

26 results | **Status, start date** (descending) › | 🔊

Active

___

GRF: Synchronizability limits and ceilings of higher-order complex networks

CHEN, G. (Principal Investigator / Project Coordinator)

1/01/26 → …

Project: Research

⭕ Ceilings   ⭕ Complex Networks   ◗ Engineering   ◗ Network Topology   ◗ Powerful Tool

GRF: Synchronization, Control and Robustness of Higher-Order Complex Networks

CHEN, G. (Principal Investigator / Project Coordinator)

1/01/25 → …

Project: Research

⭕ Complex Networks   ⭕ Synchronism   ◗ Communication Network   ◗ Text Mining

◗ Artificial Intelligence

NSFC: Efficient, Trustworthy and Safe Learning-Based Controller Design and Analysis

CHEN, J. (Principal Investigator / Project Coordinator), CHEN, G. (Co-Investigator), MO, Y. (Co-Investigator), REN, X. (Co-Investigator), SUI, Y. (Co-Investigator), XU, L. (Co-Investigator) & YOU, K. (Co-Investigator)

1/01/25 → …

Project: Research

ResCtrs: College of Engineering Research Centre for Complexity and Complex Networks (CCCN)

CHEN, G. (Principal Investigator / Project Coordinator), CHAN, S. C. (Co-Investigator), DAI, I Investigator), LIU, X. (Co-Investigator), TSE, C. K. (Co-Investigator), WU, D. (Co-Investigator), (Co-Investigator) & ZUKERMAN, M. (Co-Investigator)

1/09/00 → …

1/15/26, 10:54 AM

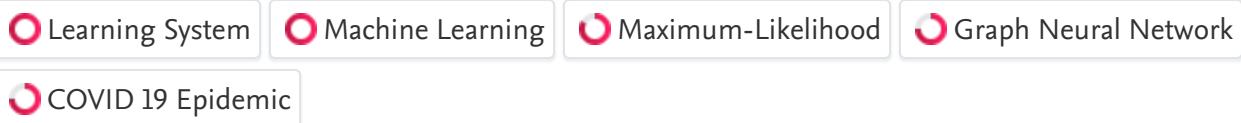Guanrong CHEN - Projects - CityUHK Scholars

Project: Research

Finished

ITF: Development of Massive Data Analytics for Rumor Source Detection and Faked News Invalidation against Infodemic

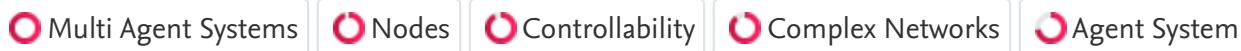CHAN, C. (Principal Investigator / Project Coordinator) & CHEN, G. (Co-Investigator)
1/10/21 → 30/09/23
Project: Research

⭕ Learning System   ⭕ Machine Learning   ⭕ Maximum-Likelihood   ⭕ Graph Neural Network

⭕ COVID 19 Epidemic

GRF: Analyzing the Robustness of Network Controllability against Malicious Attacks

CHEN, G. (Principal Investigator / Project Coordinator) & TANG, K. S. W. (Co-Investigator)
1/01/21 → 28/05/24
Project: Research

⭕ Multi Agent Systems   ⭕ Nodes   ⭕ Controllability   ⭕ Complex Networks   ⭕ Agent System

GRF: Designing Control Inputs and Inner Couplings for Controllability and Observability of Complex Dynamical Networks

CHEN, G. (Principal Investigator / Project Coordinator)
1/01/18 → 31/05/22
Project: Research

⭕ Multi Agent Systems   ⭕ Control Input   ⭕ Observability   ⭕ Multiagents   ⭕ Controllability

ITF: LoRa IoT Platform for Smart City Technology and Applications Development

TSANG, K. F. (Principal Investigator / Project Coordinator), CHAN, C. H. S. (Co-Investigator), CHEN, G. (Co-Investigator), CHUNG, S. H. H. (Co-Investigator), HANCKE, G. P. (Co-Investigator) & LEUNG, C. S. A. (Co-Investigator)
20/11/17 → 19/02/20
Project: Research

https://scholars.cityu.edu.hk/en/persons/eegchen/projects/ 3/8

◯ Optimal Network   ◯ Exhaustive Search   ◯ Fitting Ellipse   ◯ Received Signal Strength

◯ Neural Network

GRF: Controllability and Observability of Temporally Switching Directed Networks

CHEN, G. (Principal Investigator / Project Coordinator)

1/01/17 → 7/12/20

Project: Research

◯ Multiagents   ◯ Controllability   ◯ Multi Agent Systems   ◯ Observability   ◯ Nodes

GRF: Pinning Controllability and Observability for Directed Networks of Non-identical Linear Node Systems with Multi-channel Connections

CHEN, G. (Principal Investigator / Project Coordinator)

1/01/16 → 21/11/18

Project: Research

◯ Rayleigh-Fading Channel   ◯ Multipath Fading Channel   ◯ Nodes   ◯ Controllability

◯ Channel State Information

GRF: Controllability and Observability of Evolving Directed Networks with Non-identical Linear Node Dynamics

CHEN, G. (Principal Investigator / Project Coordinator)

1/01/15 → 4/12/18

Project: Research

◯ Multi Agent Systems   ◯ Agent System   ◯ Nodes   ◯ Numerical Simulation   ◯ Control Law

GRF: Distributed Coordination Control of Mobile Multi-agent Systems

CHEN, G. (Principal Investigator / Project Coordinator)

1/01/13 → 2/11/15

Project: Research

◯ Multi Agent Systems   ◯ Coordination Control   ◯ Dynamical System   ◯ Engineering Applic

◯ Agent System

GRF: Transceiver Designs for Multi-Antenna Relaying Channels with Statistical Feedback

CHEN, G. (Principal Investigator / Project Coordinator) & ZHANG, Q. K. (Co-Investigator)
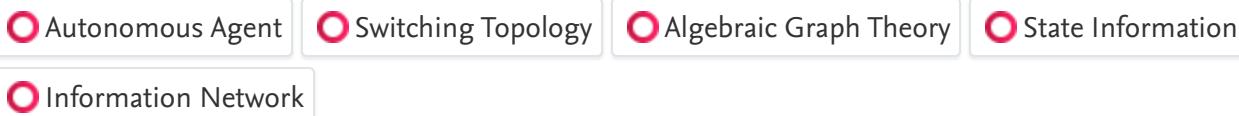
1/12/11 → 4/03/14

Project: Research

Antenna   Transceiver   Multi-Input Multi-Output   Broadcast Channel

Interference Alignment

GRF: Distributed Pinning-Control Flocking Algorithms for Complex Networked Systems

CHEN, G. (Principal Investigator / Project Coordinator)

1/10/11 → 10/08/15

Project: Research

Autonomous Agent   Switching Topology   Algebraic Graph Theory   State Information
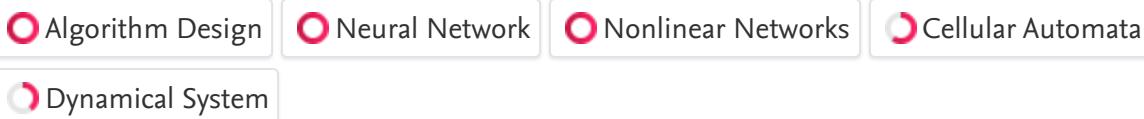
Information Network

GRF: Algorithms Design and Analysis for Binary Neural Networks and Cellular Nonlinear Networks

CHEN, G. (Principal Investigator / Project Coordinator)

1/01/11 → 21/08/14

Project: Research

Algorithm Design   Neural Network   Nonlinear Networks   Cellular Automata

Dynamical System

FR/HKJRS: Stochastic Chen's System: Stability and Applications

CHEN, G. (Principal Investigator / Project Coordinator), Chen, G. (Co-Investigator), CHUNG, K. W. (Co-Investigator) & MAYER, V. (Co-Investigator)

1/01/11 → 9/05/13

Project: Research

Asymptotic Stability   Study Objective   Control System   Systems Theory   Stochastics

GRF: Spatio-temporal Multi-models Based Process Monitoring and ....ol

LI, H. (Principal Investigator / Project Coordinator), CHEN, G. (Co-Investigator) & GAO, F. (Co-Investigator)
1/01/11 → 12/06/15
Project: Research

⭕ Process Monitoring   ⭕ Process Control   ⭕ Distributed Parameter System   ⭕ Fuzzy System

⭕ Operating Region

SRG: A Karhunen-Loeve Decomposition Approach to Chaotic Networks Synchronization

CHEN, G. (Principal Investigator / Project Coordinator)
1/04/09 → 22/09/10
Project: Research

⭕ Diffusive Coupling   ⭕ Complex Networks   ⭕ Gaussians   ⭕ Nearest Neighbor   ⭕ Oscillator

GRF: A 3D Intelligent Modelling, Learning and Control for Complex Tempo-spatial Processes in the Production Industry

LI, H. (Principal Investigator / Project Coordinator), CHEN, G. (Co-Investigator), DENG, H. (Co-Investigator) & LIU, D. (Co-Investigator)
1/01/09 → 24/08/11
Project: Research

⭕ Volterra Series   ⭕ Hybrid Modeling   ⭕ System Parameter   ⭕ Intelligent Control System

⭕ Domain Model

GRF: Graph-theoretic Approach to Network Synchronizability Analysis

CHEN, G. (Principal Investigator / Project Coordinator)
1/09/08 → 14/02/11
Project: Research

⭕ Complex Networks   ⭕ Graph Theoretic Approach   ⭕ Theoretic Approach   ⭕ Synchronism

⭕ Engineering

SRG: Design and Analysis of Boolean Functions Basis for Cellular Nonlinear Networks

CHEN, G. (Principal Investigator / Project Coordinator)
1/04/08 → 21/09/09

Project: Research

| ◉ Boolean Function | ◉ Nonlinear Networks | ◐ Network Template | ◐ Decision Making |

| ◐ Communication Cost |

NSFC: Dynamical Analysis and Global Control of Internet Data Traffic

CHEN, G. (Principal Investigator / Project Coordinator) & Wang, X. (Co-Investigator)
1/01/08 → 19/09/11
Project: Research

SRG: Improving the Synchronizability of Complex Dynamical Networks

CHEN, G. (Principal Investigator / Project Coordinator)
1/04/07 → 12/01/09
Project: Research

| ◉ Congestion Control | ◉ Network Design | ◉ Control Strategy | ◉ Engineering Application |

| ◉ Optimal Network |

ResCtrs: Centre of Applied Optimization and Computation

QI, L. (Principal Investigator / Project Coordinator), CHEN, G. (Co-Investigator), DANG, C. (Co-Investigator), DENG, X. (Co-Investigator), HAO, G. (Co-Investigator) & SUN, W. (Co-Investigator)
1/01/07 → 31/05/07
Project: Research

FR/HKJRS: Qualitative Analysis, Bifurcation and Applications of the Generalized Lorenz System

CHEN, G. (Principal Investigator / Project Coordinator), Chen, G. (Co-Investigator) & CHUNG, K. W. (Co-Investigator)
1/01/07 → 28/04/09
Project: Research

| ◉ Engineering Application | ◉ Homoclinic | ◉ Bifurcation Analysis | ◉ Nonlinear Circuit |

| ◉ Lorenz System |

GRF: A Novel Three-domain Fuzzy Control System with Applicatio Tempo-spatial Processes in Industry

LI, H. (Principal Investigator / Project Coordinator) & CHEN, G. (Co-Investigator)

1/01/07 → 8/02/10

Project: Research

⭕ Fuzzy Control ⭕ Fuzzy-Logic Control ⭕ Control System ⭕ Fuzzy System ⭕ Fuzzy Set

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