河北工业大学
HEBEI UNIVERSITY OF TECHNOLOGY

120th ANNIVERSARY
河北工业大学120周年校庆
HEBEI UNIVERSITY OF TECHNOLOGY
1903-2023

第五届数据驱动的复杂系统优化国际会议
The 5th International Conference on Data-Driven Optimization of Complex Systems
DOCS 2023

会议手册
Meeting Manual

2023年9月22-24日
中国·天津

河北工业大学
HEBEI UNIVERSITY OF TECHNOLOGY

120th ANNIVERSARY
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地址: 天津市北辰区西平道5340号

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The 5th International Conference on Data-Driven Optimization of Complex Systems

DOCS 2023

MEETING NOTICE

会议须知

会议组织

承办单位： 河北工业大学

协办单位： 省部共建电工装备可靠性与智能化国家重点实验室

组织单位： 人工智能与数据科学学院

会议时间和地点

会议时间： 2023年9月22-9月24日

会议地点： 河北工业大学会议服务中心

报道地点： 21-22日　　　　10:00-20:00　　海河假日酒店、星程酒店

　　　　　　　22日　　　　　　8:00-12:00　　河北工业大学会议服务中心

推荐酒店： 海河假日酒店

　　　　　　　星程酒店（天津北辰儿童医院店）

　　　　　　　麓枫酒店（天津北辰儿童医院店）

ORGANIZATION

组织机构

名誉主席：

| 韩 旭 | 河北工业大学 |
| 柴天佑 | 东北大学 |

大会主席：

金耀初	比勒费尔德大学
顾军华	河北工业大学
杜军平	北京邮电大学

程序主席：

孙超利	太原科技大学
王晗丁	西安电子科技大学
辛 振	河北工业大学
陈家进	香港理工大学
张孟杰	惠灵顿维多利亚大学
丁进良	东北大学
杜文莉	华东理工大学
王 凌	清华大学
阳春华	中南大学
曾志刚	华中科技大学

技术主席：

程 然	南方科技大学
田 野	安徽大学
Yew-Soon Ong	南洋理工大学
Jonathan E. Fieldsend	埃克塞特大学
Barbara Hammer	比勒费尔德大学
史玉回	南方科技大学

特邀组主席：

| 张晓红 | 太原科技大学 |

宣传主席：

| 秦飞阳 | 河北工业大学 |
| 许继重 | 河北工业大学 |

出版主席：

| 王曦璐 | 比勒费尔德大学 |
| 秦淑芬 | 太原科技大学 |

财务主席：

| 明 磊 | 河北工业大学 |
| 谢红娟 | 河北工业大学 |

注册主席：

| 刘奇奇 | 河北工业大学 |

当地组织主席：

| 杨 亮 | 河北工业大学 |
| 刘 青 | 河北工业大学 |

MEETING AGENDA

议程安排

2023/09/22

上午		下午	
09:00-09:20	开幕式	12:00-13:30	午餐
09:20-09:50	大会报告: 桂卫华 院士	14:00-16:00	分组报告（8*3=24人）
09:50-10:40	大会报告: 吴飞 教授	16:00-16:20	中场休息、茶歇
10:40-11:00	中场休息、茶歇	16:20-17:10	大会报告: Prof. Carlos Artemio Coello Coello
11:00-12:00	分组报告（4*3=12人）		

2023/09/23

上午		下午	
09:00-09:50	特邀报告: 丁进良 教授	12:15-13:30	午餐
09:50-10:40	特邀报告: 张兴义 教授	14:10-15:15	分组报告（5*3=15人）
10:40-11:00	中场休息、茶歇	15:15-15:35	中场休息、茶歇
11:00-12:15	分组报告（5*3=15人）	15:35-16:25	大会报告: Prof. Thomas Bäck
		17:30-19:30	最佳论文颁奖、晚宴

2023/09/24

上午			
09:00-09:30	特邀报告: 唐漾 教授	10:20-10:50	特邀报告: 韩亚洪 教授
09:30-10:00	特邀报告: 孟德宇 教授	10:50-11:20	特邀报告: 陈伟能 教授
10:00-10:20	中场休息、茶歇	11:20-11:50	特邀报告: 童咏昕 教授

开幕式及大会报告

22日上午		22日下午	
9:00 - 9:10	河北工业大学校领导致词	16:20 - 17:10	大会报告: Prof. Carlos
9:10 - 9:20	大会主席致词		Artemio Coello Coello
9:20 - 9:50	大会报告: 桂卫华 院士	23日下午	
9:50 - 10:40	大会报告: 吴飞 教授	15:35 - 16:25	大会报告: Prof. Thomas Bäck

特邀报告

23日上午		24日下午	
9:00 - 9:50	丁进良（东北大学）	9:00 - 9:30	唐漾（华东理工大学）
9:50 - 10:40	张兴义（安徽大学）	9:30 - 10:00	孟德宇（西安交通大学）
		10:20-10:50	韩亚洪（天津大学）
北京理工大学		10:50-11:20	陈伟能（华南理工大学）
		11:20-11:50	童咏昕（北京航空航天大学）

第一分会场

2023/09/22　多目标进化优化

时间	作者	报告题目	单位
11:00 - 11:15	Xiwen Yang, Xingxing Hao, Li Chen, Dekui Wang, Wei Zhou and Wei Liu	A Novel Two-stage Evolutionary Algorithm For Constrained Multiobjective Optimization	西北大学
11:15 - 11:30	Haoyu Zhang,Yaochu Jin and Kuangrong Hao	Evolutionary Search for Complete Neural Network Architecture With Partial Weight Sharing	杭州师范大学
11:30 - 11:45	Shangshang Yang, Cheng Zhen, Ye Tian, Haiping Ma, Yuanchao Liu, Panpan Zhang and Xingyi Zhang	Evolutionary Multi-Objective Neural Architecture Search for Generalized Cognitive Diagnosis Models	安徽大学
11:45 - 12:00	Kangjia Qiao, Jing Liang, Ying Bi, Kunjie Yu, Caitong Yue and Boyang Qu	An Unconstrained Auxiliary Framework for Constrained Many-Objective Optimization	郑州大学
午餐、休息			
14:00 - 14:15	Shuai Shao, Ye Tian, Luchen Wang, Shangshang Yang, Panpan Zhang and Xingyi Zhang	A Permutation Group-Based Evolutionary Algorithm for Car Sequencing Problems in Assembly Lines	安徽大学
14:15 - 14:30	Lianghao Li, Cheng He, Jianqing Lin and Linqiang Pan	Two-archive-based Competitive Swarm Optimizer for Constrained Multiobjective Optimization	华中科技大学
14:30 - 14:45	Youwei Sun, Juan Shen, Xiaohong Zhang and Chaoli Sun	A Particle Swarm Optimization with Dynamic Strategy for Multi-modal Multi-objective Location Optimization Problems	太原科技大学
14:45 - 15:00	Jingfa Liu, Taichao Xiao and Wanhua Li	Multi-objective particle swarm optimization algorithm for unequal-area dynamic facility layout problem	广东外语外贸大学
15:00 - 15:15	Yang Liu, Guo Yu, Jian Cheng, Chao Jiang, Xinzhe Wang and Lianbo Ma	Transferable Preference Learning Assist Multi-Objective Decision Analysis for Hydrocracking	东北大学
15:15 - 15:30	Zeqi Zheng, Ziqi Wang, Xueming Yan, Yaochu Jin, Shiqing Liu and Qiqi Liu	Federated Graph Neural Networks with Bipartite Embedding for Multi-objective Facility Location	广东外语外贸大学
15:30 - 15:45	Xiaomin Li, Bo Li and Yunhe Wang	Multiobjective fuzzy competitive swarm optimization for high-dimensional feature selectio	河北工业大学
15:45 - 16:00	Qianhui Wang, Yulong Ye, Qingling Zhu, Songbai Liu and Qiuzhen Lin	Dynamic constrained multi-objective evolutionary optimization via adaptive two-stage archiving and autoencoder prediction	深圳大学

2023/09/23　代理模型辅助的进化优化

时间	作者	报告题目	单位
11:00 - 11:15	Yiyun Gong, Li Kang, Gangzhu Qiao, Dongpeng Guo, Haibo Yu and Jianchao Zeng	The adaptive search strategy selection based on the guide of two learning mechanisms for high-dimensional expensive problems	中北大学
11:15 - 11:30	Yuntian Zhang, Chen Chen, Tongyu Wu, Changhao Miao and Shuxin Ding	Surrogate-Assisted Hybrid Metaheuristic for Mixed-Variable 3-D Deployment Optimization of Directional Sensor Networks	北京理工大学
11:30 - 11:45	Xiangyu Wang, Tianzi Zheng and Yaochu Jin	Adaptive Merging and Coordinated Offspring Generation in Multi-Population Evolutionary Multi-Modal Multi-Objective Optimization	Bielefeld University
11:45 - 12:00	Jing Liang, Zhuo Hu, Zong-Wei Li, Ying Bi, Han Cheng and Wei-Feng Guo	A novel evolutionary constrained multi-objective optimization method for identifying personalized drug targets combining with structural network control principles	郑州大学
12:00 - 12:15	Lindong Xie, Genghui Li, Kangnian Lin and Zhenkun Wang	Dual-State-Driven Evolutionary Optimization for Expensive Optimization Problems with Continuous and Categorical Variables	南方科技大学
午餐、休息			
14:00 - 14:15	Xun Huang, Fei Li and Yuanchao Liu	Comparative Analysis of surrogate Models for High-Dimensional Expensive Problems	安徽工业大学
14:15 - 14:30	Huiting Mao, Xuhua Shi and Bin Zhang	Many-Objective Evolutionary Optimization Algorithm based on Single Objective Population Distribution Characteristics	宁波大学
14:30 - 14:45	Ning Han, Yinnan Chen, Xinchao Zhao and Mingzhang Han	Portfolio Optimization based on Principal Component Analysis and Second-Order Surrogate-Assisted Memetic Differential Evolution Algorithm	北京邮电大学
14:45 - 15:00	Wenji Li, Yifeng Qiu, Zhaojun Wang, Qinchang Zhang, Ruitao Mai, Biao Xu, Yue Zhang, Jiafan Zhuang and Zhun Fan	A Constrained Multi-objective Evolutionary Algorithm Based on Early Convergence Followed by Diversity	汕头大学
15:00 - 15:15	Xilu Wang and Yaochu Jin	A New Expected Improvement Acquisition Function for Expensive Multi-objective Optimization	Bielefeld University

第二分会场

2023/09/22　深度学习

时间	作者	报告题目	单位
11:00 - 11:15	Yongtao Chen, Sen Qiu, Zhelong Wang and Hongyu Zhao	1DCNN-TRSNet: A Hybrid End-to-End Arrhythmia Classification Deep Network Based On Transformer	大连理工大学
11:15 - 11:30	Ke Zhang, Haisheng Li, Qiang Cai and Jian Cao	Cross-Layer Feature Fusion Vision Transformer for Fine-grained visual Classification	北京工商大学
11:30 - 11:45	Yiming Bai, Lei Chen, Ying Lei and Hongjuan Xie	A Deep Learning Prediction Approach for Machine Workload in Cloud Computing	河北工业大学
11:45 - 12:00	Shaojie Shi, Xihe Qiu, Yajun Ru and Xiaoyu Tan	A DeepAR-based Neural Network for Time Series Forecasting	上海工程技术大学
午餐、休息			
14:00 - 14:15	Ruoyu Fan, Meiyu Liang, Mengran Yin and Junping Du	Expression Recognition and Intelligent Classroom State Mining in Teaching Videos Based on Semi-Supervised Learning Generative Adversarial Network	北京邮电大学
14:15 - 14:30	Wentao Bai, Suhang Gu, Chao Yan, Haoyu Zhang, Chunli Jiang and Fan Guo	Identification of Switched Gated Recurrent Neural Networks Using the EM Algorithm	常熟理工学院
14:30 - 14:45	Yimeng Chen, Devin Jia, Ying Lei and Bo Li	Ensemble masked autoencoder and Gaussian mixture models for cardinality estimation	河北工业大学
14:45 - 15:00	Xin Yan, Cheng He, Jing Yin, Chuanji Zhang and Hongbin Li	Voltage Transformer Anomaly Detection Using LSTM Based Autoencoder	华中科技大学
15:00 - 15:15	Kaiwen Xiao, Xiaodong Cai and Ke Xu	An Empirical Study on Neural Networks Pruning: Trimming for Reducing Memory or Workload	安徽大学
15:15 - 15:30	Junhua Gu, Wei Liu, Xiaoyuan Zheng and Hongpu Liu	A Data-driven Algorithm Based on Neural Network Prediction for Agent Trajectory Tracking	河北工业大学
15:30 - 15:45	Tianlin Zhang, Lei Wang, Yike Hu, Jianxun Zhang and Wenzheng Zhang	An Evaluation Framework for Urban Environmental Stress Perception: Based on Deep Learning and Street View Images	天津大学
15:45 - 16:00	Tianlong Zhang, Zhe Xue, Xu Shao, Yawen Li, Junjiang Wu and Yunfei Long	CPPFEE: A Cascade Pointer Prediction Framework using Multi-CNN for Financial Event Extraction	北京邮电大学

2023/09/23　强化学习

时间	作者	报告题目	单位
11:00 - 11:15	Yichi Zhang, Su Chen, Bing Tu and Pengyu Yan	Integrated Dynamic Control of Process and Cost in Complicated R&D Projects: A Reinforcement Learning Approach	电子科技大学
11:15 - 11:30	Zixuan Chen, Jianqi Wang, Dan Wang, Sheng Yu, Jing Huo and Yang Gao	Decision-Making for Satellite Anti-Interception Missions Leveraging Multi-Agent Reinforcement Learning	南京大学
11:30 - 11:45	xiaoping zhang,Yulan wang,tianhai zhao, shuai hu and hui zhang	Q-Learning Based Adaptive Flow Control	西北工业大学
11:45 - 12:00	Weikang Chen, Junping Du, Yingxia Shao, Jia Wang and Yangxi Zhou	Dynamic Fair Federated Learning Based on Reinforcement Learning	北京邮电大学
12:00 - 12:15	Shaqu Qumu, Caiting Zhu, Qiulin Luo, Min Zhou and Shuai Wang	Solving the Influence Maximization Problem using a Genetic Deep Reinforcement Learning Approach	中山大学
午餐、休息			
14:00 - 14:15	Jian Wang, Lei Chen, Lin Yang and Ming Wang	HWTune: A Hardware-aware Database Tuning System With Deep Reinforcement Learning	河北工业大学
14:15 - 14:30	Ziang Liu and Tatsushi Nishi	Inventory Control with Lateral Transshipment Using Proximal Policy Optimization	Okayama University
14:30 - 14:45	Jianlin Chen and Jianping Luo	Enhancing Vehicle Routing Solutions through Attention-Based Deep Reinforcement Learning	深圳大学
14:45 - 15:00	Liao Zhu, Chunxiuzi Liu, Jingsheng Xu and Ping Guo	Adaptive Optimal Control of Discrete-Time Linear Systems with Discounted Value: Off-Policy Reinforcement Learning	北京师范大学
15:00 - 15:15	Qi Wang, Lei Chen, Lin Yang and Ming Wang	Multi-hop Reasoning of Temporal Knowledge Graph Based on Reinforcement Learning	河北工业大学

第三分会场

2023/09/22　图数据分析

时间	作者	报告题目	单位
11:00 - 11:15	Zhuanlian Ding, Lve Cao and Dengdi Sun	Link Constraint Reliability Learning for Semi-Supervised Community Detection	安徽大学
11:15 - 11:30	Liang Chen, Zhe Xue, Xu Shao, Yawen Li, Shilong Ou and Boang Li	EGHAN: Event Graph enhanced Hypergraph Attention Network for Stock Movement Forecasting	北京邮电大学
11:30 - 11:45	Chengjie Ma, Junping Du, Meiyu Liang and Zeli Guan	Topic model based on co-occurrence word networks for unbalanced short text datasets	北京邮电大学
11:45 - 12:00	Tianyu Zhao, Junping Du, Yingxia Shao and Ang Li	Aspect-Based Sentiment Analysis using Local Context Focus Mechanism with DeBERTa	北京邮电大学
午餐、休息			
14:00 - 14:15	Peiyu Liu, Junping Du, Yingxia Shao and Zeli Guan	Relation Extraction Model Based on Semantic Enhancement Mechanism	北京邮电大学
14:15 - 14:30	Yajuan Zhang, Lan Zhang, Penghui Niu and Wenjia Xu	AGF-Net: Adaptive road extraction network with global feature fusion	河北工业大学
14:30 - 14:45	Yifeng Gu, Devin Jia, Ying Lei and Bo Li	Relational Learning with Attribute-Based Multi-Head Attention Regulator for Few-Shot Knowledge Graph Completion	河北工业大学
14:45 - 15:00	Shilong Ou, Zhe Xue, Xu Shao, Yawen Li, Zhensheng Xian and Liang Chen	Enhanced Stock Movement Prediction with Event Graph and Dynamic Sentiment Analysis	北京邮电大学
15:00 - 15:15	Xinchu Han and Lijia Ma	Structural balance computation of signed hypergraphs via memetic algorithm	深圳大学
15:15 - 15:30	Liuyang Guo, Huicai Wu, Yanli Jiao and Ping Zhang	Long Short Dynamic Graph Neural Network for Traffic Flow Forecasting	河北工业大学
15:30 - 15:45	Shixuan Liu, Jijun Zhu, Wei Lei and Ping Zhang	Spatial-Temporal Attention Graph WaveNet For Traffic Forecasting	河北工业大学
15:45 - 16:00	Shaojin Geng, Wuzhao Li, Jiwei Tu, Dongyang Li, Weian Guo, Lei Wang and Qidi Wu	MOEMT-RPA: Reference point-assisted explicit multi-objective evolutionary multi-task algorithm	同济大学

2023/09/23　复杂系统的应用

时间	作者	报告题目	单位
11:00 - 11:15	Yonglin He, You Wu, Cheng He, Hongbin Li and Chaojun Ma	Impact of Spatial Encoding Methods on Differential Evolution: A Case Study on Non-contact Current Measurement	华中科技大学
11:15 - 11:30	Xiaodan Wu, Yuchen Lin and Tao Lin	Collaborative Production Task Allocation Decision for Multi Smart Factory	河北工业大学
11:30 - 11:45	Guoqing Cai, Yexuan Shi, Hao Zhou, Nan Zhou, Manxue Guo and Zimeng Jia	Federated k-Dominant Skyline: An Efficient Approach Under Differential Privacy	北京航空航天大学
11:45 - 12:00	Zihan Gao, Chuanji Zhang, Cheng Cheng, Cheng He and Hongbin Li	Online Calibration of Instrument Transformers Considering the Time-varying Impedance of Transmission Lines	华中科技大学
12:00 - 12:15	Tian-Fang Zhao, Ling-Ling Zhang, Zhi-Xuan Zhang and Li-Ming Ma	Data-driven Regression Modeling for Measuring the Influence of Infodemic over Social Media	暨南大学
午餐、休息			
14:00 - 14:15	Tian-Fang Zhao, Shu-Xian Zheng, Qi-Hang Zheng and Hong Gu	Data-Driven Accessible Public Welfare Communication and Mobile Crowdsourcing System	暨南大学
14:15 - 14:30	Xudong Feng, Jin Liu, Jialu Yin, Handing Wang and Ruochen Liu	Time Series Anomaly Detection based on Data Stream Clustering	西安电子科技大学
14:30 - 14:45	Ying Liu, Zhe Xue, Yawen Li, Xu Shao, Yu Zang and Junjiang Wu	Dual Semantic Enhanced Event Causality Identification with Derivative Temporal Prompt	北京邮电大学
14:45 - 15:00	Ku Zhao, Tao Luo, Kehan Chen and Libo Zhang	Data Uncertainty Learning in Breast Cancer Recognition	西南大学
15:00 - 15:15	Ran Zhang, Linfeng Sui, Boning Li, Jinmin Gong, Chengyuan Shen and Jianting Cao	Brain death determination aid system using automatic D-2TEMD	Saitama Institute of Technology

INVITED SPEAKER

特邀讲者

桂卫华

中国工程院院士、教授、博士生导师。现任中南大学学术委员会主任、有色冶金自动化教育部工程研究中心主任、中国自动化学会副理事长等。长期致力于工业过程控制理论、技术和工程应用的研究，创建了以智能集成为核心的有色冶金过程建模、控制与优化的理论与方法。获国家科技进步二等奖3项、国家技术发明二等奖1项，获"何梁何利基金科学与技术进步奖"、"全国教书育人楷模"、"全国模范教师"、"全国优秀科技工作者"等荣誉称号。

题目：工业低碳运行中的控制与优化问题
摘要：

工业生产高碳特性显著，是实现"双碳"战略的主战场。报告简要介绍了我国工业碳排放现状，从检测、控制和优化角度分析了工业低碳运行中的关键科学问题与研究内容。以铝电解行业为背景，介绍了铝电解槽高效节能优化控制技术。最后给出了几点建议与思考。

吴 飞

Fei Wu received his B.Sc., M.Sc. and Ph.D. degrees in computer science from Lanzhou University, University of Macau and Zhejiang University in 1996, 1999 and 2002 respectively. From October, 2009 to August 2010, Fei Wu was a visiting scholar at Prof. Bin Yu's group, University of California, Berkeley. Currently, He is a Qiushi distinguished professor of Zhejiang University at the college of computer science. He is the deputy dean of Shanghai Institute for Advanced Study of Zhejiang University, and the director of Institute of Artificial Intelligence of Zhejiang University. He is the chairman of IEEE CAS Hangzhou-Chapter since Oct, 2018. He is group leader of artificial intelligence innovation action plan of the Ministry of Education, the Section Executive Editors-in-Chief of Engineering, editorial members of Frontiers of Information Technology & Electronic Engineering. He has won various honors such as the Award of National Science Fund for Distinguished Young Scholars of China (2016). His research interests mainly include Artificial Intelligence, Multimedia Analysis and Retrieval and Machine Learning.

题目： LLM for Domain-specific Tasks
摘要:

In recent years, some large language models (e.g., OpenAI's ChatGPT, and Google's PaLM) have been shown to exhibit more general intelligence than previous AI models across a variety of domains and tasks. These LLMs can generate novel and unexpected responses—a significant departure from earlier routine models that were limited to generating predictable and formulaic responses. In this talk, I will introduce how to train domain-specific LLM for certain tasks such education and legal domains. The main topics consist of domain-specific SFT and the integration of data-driven and knowledge-guided techniques.

Carlos Artemio Coello Coello

Carlos Artemio Coello Coello received a PhD in Computer Science from Tulane University (USA) in 1996. His research has mainly focused on the design of new multi-objective optimization algorithms based on bio-inspired metaheuristics (e.g., evolutionary algorithms), which is an area in which he has made pioneering contributions. He currently has more than 570 publications, including more than 200 journal papers and 50 book chapters. He has published a monographic book and has edited 3 more books with publishers such as World Scientific and Springer. He has supervised 22 PhD theses (including 3 in Argentina) and 48 Masters thesis (including one in France). Several of the PhD theses that he has supervised, have received awards in national competitions. He has also received (with his students) several "best paper awards" at different international conferences. He is also the only Latin American who has been awarded (twice) the "outstanding paper award" of the IEEE Transactions on Evolutionary Computation. His publications currently report 68,359 citations in Google Scholar. According to Scopus, Dr. Coello has 28,948 citations, excluding self-citations and citations from all his co-authors. His h-index is 102, according to Google Scholar, 73 according to Scopus and 67 according to Clarivate Analytics (known before as ISI Web of Science). In the ShanghaiRanking's Global Ranking of Academic Subjects 2016 developed by Elsevier, he appears as one of the 300 most highly cited scientists in the world in "Computer Science", occupying the first place in Mexico.

He has received several awards, including the National Research Award (in 2007) from the Mexican Academy of Science (in the area of exact sciences), the 2009 Medal to the Scientific Merit from Mexico City's congress, the Ciudad Capital: Heberto Castillo 2011 Award for scientists under the age of 45, in Basic Science, the 2012 Scopus Award (Mexico's edition) for being the most highly cited scientist in engineering in the 5 years previous to the award and the 2012 National Medal of Science in Physics, Mathematics and Natural Sciences from Mexico's presidency (this is the most important award that a scientist can receive in Mexico). He also received the Luis Elizondo Award from the Tecnológico de Monterrey in 2019. Additionally, he is the recipient of the 2013 IEEE Kiyo Tomiyasu Award, "for pioneering contributions to single- and multiobjective optimization techniques using bioinspired metaheuristics", of the 2016 The World Academy of Sciences (TWAS) Award in "Engineering Sciences", and of the 2021 IEEE Computational Intelligence Society Evolutionary Computation Pioneer Award. Since January 2011, he is an IEEE Fellow. He is currently the Editor-in-Chief of the IEEE Transactions on Evolutionary Computation.

He is Full Professor with distinction (Investigador Cinvestav 3F) at the Computer Science Department of CINVESTAV-IPN in Mexico City, Mexico.

题目： What is Missing in Evolutionary Optimization?
摘要：

In this talk, I'll provide some thoughts about my view of a field in which I have worked during almost 30 years. Besides mentioning some relevant research topics related to both single- and multi-objective optimization that are worth exploring in the next few years (e.g., dynamic problems, high dimensionality, expensive objective functions, etc.), I'll provide a more general view of the field, sharing my views about the sort of research work which I believe that is needed today so that we can start switching from producing to understanding.

Thomas Bäck

Thomas Bäck (Fellow, IEEE) received the Diploma degree in Computer Science in 1990 and the Ph.D. degree in Computer Science in 1994 (under supervision of H.-P. Schwefel), both from the University of Dortmund, Germany. He is Professor of Computer Science with the Leiden Institute of Advanced Computer Science (LIACS), Leiden University, Netherlands. His research interests include evolutionary computation, machine learning, and their real-world applications, especially in sustainable smart industry and health.

Dr. Bäck has been elected as member of the Royal Netherlands Academy of Arts and Sciences (KNAW, 2021), as IEEE Fellow (class of 2022), and as a member of Academia Europaea (2022). He was a recipient of the IEEE Computational Intelligence Society (CIS) Evolutionary Computation Pioneer Award in 2015, was elected as Fellow of the International Society of Genetic and Evolutionary Computation in 2003, and received the best Ph.D. thesis award from the German society of Computer Science (GI) in 1995.

He currently serves as an Associate Editor for the IEEE Transactions on Evolutionary Computation and Artificial Intelligence Review journals and area editor for the ACM Transactions on Evolutionary Learning and Optimization. He was also co-editor-in-chief of the Handbook of Evolutionary Computation (CRC Press/Taylor & Francis 1997), co-editor of the Handbook of Natural Computing (Springer, 2013), author of Evolutionary Computation in Theory and Practice (OUP, New York, 1996) and co-author of Contemporary Evolution Strategies (Springer, 2013).

题目：Optimizing the Optimization Algorithm for Engineering Applications
摘要：

For decades, researchers have been looking at paradigms gleaned from nature as inspiration for problem solving approaches, for example in the domain of optimization. There are many classes of such algorithms, including for example evolutionary algorithms, particle swarms, differential evolution, ant colony optimization, and the number of proposed variants of them is quite large. This makes it hard to keep track of the variants and their respective strengths, and even more so it creates a difficult situation for non-experts who are interested in selecting the best algorithm for their real-world application problem.

In this presentation, I propose the idea to automatically optimize the optimization heuristic. This task can be approached as an algorithm configuration problem, for which I will present some examples illustrating that this task can be handled by direct global optimization algorithms – in other words, by "automatically optimizing the optimization algorithm". I will give an example how a combinatorial design space of 4608 configuration variants of evolution strategies can be searched, and how the results can be analyzed using data mining. This approach provides an opportunity for discovering the unexplored areas of the optimization algorithm design space. Extensions towards other algorithm design spaces such as particle swarm optimization and differential evolution are then outlined, too.

In the second part of the presentation, I will discuss a range of real-world engineering design applications, for which such an approach could truly provide a competitive advantage. In such cases, optimizing the optimization algorithm requires a proper definition of the problem class, for which the optimization is executed. For the example of automotive crash optimization problems, I will present first results demonstrating that these problems differ a lot from the classical benchmark test function sets used by academic community, and present an automated approach to find test functions that properly represent the real-world problem. First results on the performance gain that can be achieved by optimizing the optimization algorithm on such real-world problems are also presented.

丁进良

Jinliang Ding is a Professor of the State Key Laboratory of Synthetical Automation for Process Industry, Northeastern University. He has authored or co-authored over 200 refereed journal papers and refereed papers at international conferences. He has also invented or co-invented over 50 patents. His research interests include modeling, plant-wide control and optimization for the complex industrial systems, machine learning, industrial artificial intelligence, and computational intelligence and application. Dr. Ding was a recipient of the Young Scholars Science and Technology Award of China in 2016, the National Science Fund for Distinguished Young Scholars in 2015, the National Technological Invention Award in 2013, and four First-Prize of Science and Technology Awards of the Ministry of Education in 2006, 2012, 2018 and 2022, respectively. One of his articles published on Control Engineering Practice was selected for the Best Paper Award of 2011–2013.

题目：Dynamic Intelligent Optimization of Complex Industrial Process
摘要：

The deep integration of artificial intelligence and manufacturing is triggering far-reaching industrial changes. The process industry holds a fundamental strategic position in the national economy, and intelligent manufacturing is an inevitable choice to improve its competitiveness. How to achieve intelligent optimization of the process industry poses new challenges and opportunities for automation. Considering the actual needs of global optimization, and based on in-depth analysis of the characteristics and key scientific issues of global collaborative operation optimization problems, this talk combines control and optimization, intelligent behavior and intelligent methods, and introduces methods such as transfer learning and deep learning to study the design method of data-driven complex industrial system operation optimization control for global optimization, This report will introduce relevant recent research results.

张兴义

Prof. Xingyi Zhang is currently a Professor with the School of Computer Science and Technology, Anhui University, Hefei, China. His current research interests include unconventional models and algorithms of computation, evolutionary multi-objective optimization, and logistic scheduling. He is the recipient of the 2018, 2021, and 2024 IEEE Transactions on Evolutionary Computation Outstanding Paper Award and the 2020 IEEE Computational Intelligence Magazine Outstanding Paper Award. He is an Associate Editor of IEEE Transactions on Evolutionary Computation.

题目：Easy Problem Assisted Optimization is a Rich Framework for Addressing Complex Problems
摘要：

Complex optimization problems usually involve a large number of decision variables, constraint conditions and uncertainties, which make it difficult for traditional optimization algorithms to efficiently obtain high-quality solutions. To address the challenges in complex problems, this talk introduces an efficient optimization framework assisted by easy problems to solve complex optimization problems. Focusing on three aspects of complex optimization problems: large-scale decision-making variables, complex constraint conditions, and environmental uncertainties, this report introduces five evolutionary optimization algorithms based on the idea of assisted optimization with easy problems.

唐　漾

Yang Tang received the B.S. and Ph.D. degrees in electrical engineering from Donghua University, Shanghai, China, in 2006 and 2010, respectively. From 2008 to 2010, he was a Research Associate with The Hong Kong Polytechnic University, Hong Kong. From 2011 to 2015, he was a Post-Doctoral Researcher with the Humboldt University of Berlin, Berlin, Germany, and with the Potsdam Institute for Climate Impact Research, Potsdam, Germany. He is now a Professor with the East China University of Science and Technology, Shanghai. His current research interests include distributed estimation/control/optimization, cyber-physical systems, hybrid dynamical systems, computer vision, reinforcement learning and their applications.

Prof. Tang was a recipient of the Alexander von Humboldt Fellowship and has been the ISI Highly Cited Researchers Award by Clarivate Analytics from 2017. He is a Senior Board Member of Scientific Reports, an Associate Editor of IEEE Transactions on Neural Networks and Learning Systems, IEEE Transactions on Cybernetics, IEEE Transactions on Industrial Informatics, IEEE/ASME Transactions on Mechatronics, IEEE Transactions on Circuits and Systems-I: Regular Papers, IEEE Transactions on Cognitive and Developmental Systems, IEEE Transactions on Emerging Topics in Computational Intelligence, IEEE Systems Journal, Engineering Applications of Artificial Intelligence (IFAC Journal) and Science China Information Sciences, etc. He has published more than 200 papers in international journals and conferences, including more than 100 papers in IEEE Transactions and 20 papers in IFAC journals. He has been awarded as best/outstanding Associate Editor in IEEE journals for four times. He is a (leading) guest editor for several special issues focusing on autonomous systems, robotics, and industrial intelligence in IEEE Transactions.

题目：Perception and Decision-Making in Autonomous Intelligent Systems via Deep Learning
摘要：

In this talk, we will review our recent advances in perception and decision-making in autonomous intelligent systems. We will first report our results in unsupervised depth estimation via deep learning in dynamic environment. Then, we will show our results adapted to different extreme conditions like night, rainy night and snow days. After giving our results in perception of complex environment, we will also present our results in decision-making and coordination control of UAV. Finally, some concluding remarks will be provided.

孟德宇

西安交通大学教授，博士生导师，任大数据算法与分析技术国家工程实验室机器学习教研室负责人。发表论文百余篇，其中IEEE汇刊论文60余篇，计算机学会A类会议40篇，谷歌学术引用超过24000次。现任IEEE Trans. PAMI，Science China: Information Sciences等7个国内外期刊编委。目前主要研究聚焦于元学习、概率机器学习、可解释性神经网络等机器学习基础研究问题。

题目：Fourier Series Expansion Based Filter Parametrization for Equivariant Convolutions
摘要：

It has been shown that equivariant convolution is very helpful for many types of computer vision tasks. Recently, the 2D filter parametrization technique has played an important role for designing equivariant convolutions, and has achieved success in making use of rotation symmetry of images. However, the current filter parametrization strategy still has its evident drawbacks, where the most critical one lies in the accuracy problem of filter representation. To address this issue, we explore an ameliorated Fourier series expansion for 2D filters, and propose a new filter parametrization method based on it. The proposed filter parametrization method not only finely represents 2D filters with zero error when the filter is not rotated, but also substantially alleviates the aliasing-effect-caused quality degradation when the filter is rotated. Accordingly, we construct a new equivariant convolution method based on the proposed filter parametrization method, named F-Conv. We prove that the equivariance of the proposed F-Conv is exact in the continuous domain, which becomes approximate only after discretization. Moreover, we provide theoretical error analysis for the case when the equivariance is approximate, showing that the approximation error is related to the mesh size and filter size. Extensive experiments show the superiority of the proposed method. Particularly, we adopt rotation equivariant convolution methods to a typical low-level image processing task, image super-resolution. It can be substantiated that the proposed F-Conv based method evidently outperforms classical convolution based methods. Compared with pervious filter parametrization based methods, the F-Conv performs more accurately on this low-level image processing task, reflecting its intrinsic capability of faithfully preserving rotation symmetries in local image features.

韩亚洪

Yahong Han is an Outstanding Professor of the College of Intelligence and Computing at Tianjin University. He received Ph. D. degree from the College of Computer Science and Technology at Zhejiang University. His current research interests include Multimedia Content Understanding and AI Security. He was awarded the CCF Outstanding Dissertation in 2012 and was elected to the Program for New Century Excellent Talents in University by the Ministry of Education of China in 2013. He has been a Visiting Scholar at UC Berkeley from Nov. 2014 to Nov. 2015. He was awarded the Best Paper Finalist and Grand Challenge Honorable Mention Award of ACM Multimedia 2017. He is also the Winner of the Large-Scale Video QA Challenge in ICCV 2017. In 2021, as the Ph. D. Supervisor, he was awarded the CSIG Outstanding Dissertation. Recently, Yahong received fundings of key programs from China's Ministry of Science & Technology and NSFC etc.

题目：Black-box Adversarial Robustness Evaluation of Deep Vision Models
摘要：

With the rapid development of techniques like deep learnings, we are witnessing an unprecedented booming of AI and its applications. The vulnerability of deep learning models to adversarial noises raised great attention on the trustworthy machine learning and AI security from both academics and industry. In this talk, we will discuss the theory of adversarial robustness evaluation of deep vision models, proposes and defines the security radius of adversarial robustness, and proves that the adversarial robustness evaluation based on noise compression is more complete. Under the guidance of the evaluation method, the metric of noise sensitivity is defined, and ViTs' security boundary of adversarial robustness is explored with black-box decision-based attack. A unified transfer-decision-based black-box adversarial noise compression framework is proposed composed of diversified attacks and noise compression methods. Finally, the security of transferring data and model towards the open environment is discussed.

陈伟能

Wei-Neng Chen (S'07-M'12-SM'17) received the bachelor's and Ph.D. degrees in computer science from Sun Yat-sen University, Guangzhou, China, in 2006 and 2012, respectively. Since 2016, he has been a Full Professor with the School of Computer Science and Engineering, South China University of Technology, Guangzhou. He has co-authored over 100 international journal and conference papers, including more than 70 papers published in the IEEE Transactions journals. His current research interests include computational intelligence, swarm intelligence, network science, and their applications. Dr. Chen was a recipient of the IEEE Computational Intelligence Society (CIS) Outstanding Dissertation Award in 2016, and the National Science Fund for Excellent Young Scholars in 2016. He was also a Principle Investigator (PI) of the National Science and Technology Innovation 2030 -- the Next Generation Artificial Intelligence Key Project. He is currently the Vice-Chair of the IEEE Guangzhou Section, and the Chair of IEEE SMC Society Guangzhou Chapter. He is also a Committee Member of the IEEE CIS Emerging Topics Task Force. He serves as an Associate Editor for the IEEE Transactions on Neural Networks and Learning Systems, and the Complex & Intelligent Systems.

题目：Distributed & Cooperative Swarm Intelligence Algorithms
摘要：

The National Development Plan for the New Generation of Artificial Intelligence (AI) lists crowd & swarm intelligence as one of the key development directions of the next generation AI theory and technology. Among them, swarm intelligence (SI) and evolutionary computation (EC) methods, which are inspired by the swarm intelligence behaviours of nature, have been widely used in industrial optimization. One characteristic of SI and EC is their inherent nature of parallelism. As a result, it is promising to couple the strong global search and optimization ability of EC and the strong computing power of distributed computing systems to develop a new generation of distributed EC and SI methods.

To this end, this report will introduce the research framework of distributed and cooperative EC and SI algorithms, providing a new approach to solving complex decision-making and optimization problems with large-scale decision variables and distributed big data. First, the report will introduce the overall framework of distributed and cooperative EC and SI. Then, the multiplex collaboration mechanism of distributed EC is expounded from three different perspectives, including dimensional collaboration, data collaboration, and target collaboration. Finally, the application of relevant methods will be introduced.

童咏昕

Dr. Yongxin Tong is currently a full professor in the School of Computer Science and Engineering at Beihang University. He received his Ph.D. in Computer Science and Engineering from the Hong Kong University of Science and Technology (HKUST). His research interests include federated learning, crowd intelligence, big spatiotemporal data analysis and database systems, etc. He received NSFC Excellent Young Scholar, the Chinese Institue of Electronics First Prize in Natural Science Award, Alibaba DAMO Academy Young Fellow in 2018, the Excellent Demonstration Award from VLDB 2014, the champion from KDD Cup 2020 and several best paper awards. He published more than 100 papers in prestigious international journals (e.g. ACM TODS, IEEE TKDE and VLDBJ) and conferences (e.g. SIGMOD, SIGKDD, VLDB and ICDE). He is an associate editor for IEEE Transactions on Knowledge and Data Engineering (TKDE), IEEE Transactions on Big Data (TBD), etc. He serves as the PC Co-Chair and Area Chair of multiple premier conferences, such as VLDB, ICDE, DASFAA, etc. He is also the distinguished speaker and member of CCF (China Computer Federation).

题目：Internet Crowd Behaviour-based Dynamic Resource Allocation Services

摘要：

One of the key computational challenges in improving the efficiency of the Internet economy is how to effectively allocate offline service resources to a large number of online users. This has become a fundamental aspect of numerous Internet economic services. Essentially, it aims to address the complex problem arising from the contradiction between limited resource supply and the overwhelming demand from a vast user base. Conventional methods have been hindered by their reliance on the assumption of static resource allocations, resulting in inefficient and inflexible assignment. Therefore, by using these methods, it is difficult to fully tackle the challenges posed by the Internet environment, such as discovering human crowd patterns, balancing the resource supply and demand, and overcoming the dynamicity in resource allocation.

In this talk, I will begin with an overview of the background of research on dynamic resource allocation. Next, I will introduce a resource allocation framework driven by the collective behaviors of Internet users. Finally, by showing its application in industries such as intelligent transportation and smart logistics, I will also demonstrate how this framework can be effectively implemented in real-world scenarios.

Organizational Unit Introduction

组织单位介绍

　　河北工业大学的前身是创办于1903年的北洋工艺学堂，是我国最早的培养工业人才的高等学校之一，创办了全国最早的高校校办工厂。1929年改称河北省立工业学院，1995年更名为河北工业大学。学校1996年跻身国家首批"211工程"重点建设高校行列；2014年由河北省、天津市和教育部共建；2017年，入选国家"双一流"建设高校。120年来，学校始终秉承"兴工报国"办学传统和"勤慎公忠"校训精神，形成了"工学并举"的办学特色，为国家培养了30余万名优秀毕业生。近年来，材料科学、化学、工程学3个学科领域分别进入ESI全球排名前1%，并不断向前进位。2020年获评"全国文明校园"。

　　学校设有20个教学机构，现有64个本科招生专业，其中37个国家级一流本科专业建设点，涵盖工、理、经、管、文、法、艺七大学科门类。拥有1个国家"世界一流学科"、2个国家重点学科，3个河北省世界一流学科建设项目，4个河北省国家一流学科建设项目，7个天津市重点学科。拥有11个博士后科研流动站、11个一级博士学位授权点、26个一级硕士学位授权点、17个专业学位类别、28个专业学位硕士授权领域。现有全日制本科在校生23000余人、研究生9000余人。

　　学校大力实施人才强校工程，不断完善高水平人才引进和培养机制。近年来，全职引进和培养了包括"长江学者"、"国家杰出青年基金"获得者、国家"万人计划"科技创新领军人才等国家级人才27人，320余人具有国家级教学名师、"新世纪百千万人才工程"国家级人选、国务院特殊津贴获得者等省部级以上专家称号。现有教职员工2800余人，其中专任教师1800余人。

近年来，围绕京津冀协同发展重大国家战略需要和区域产业转型升级发展需求，学校依托省市部共建平台，确立"落地冲高"科研工作思路，集聚区域办学资源，学校建有包括省部共建国家重点实验室、国家级工程技术研究中心、国家地方联合工程实验室在内的国家和省部级科研平台62个。荣获国家自然科学二等奖、国家科技进步二等奖、"侯德榜化工科学技术成就奖"、河北省科技突出贡献奖等多项省部级以上奖励。"十三五"以来，主持国家重大重点项目51项、国家自然科学基金600余项，授权专利2700余项，获批国家首批知识产权试点高校，位列中国高校专利100强第70位。首颗"元光号"小卫星搭乘长征八号运载火箭成功飞天并在轨运行。高性能机器人触觉传感智能系统入选2020年"科创中国"先导技术榜单。学校年科技经费3亿元，百余项科研成果获国家和省部级奖励，是河北省内获得省科学技术突出贡献奖最多的高校，也是河北省十大优秀发明创造单位。

学校注重国际交流合作，现已形成全方位、多层次、宽领域的国际合作办学新格局。目前，学校已与60余所国外高校签订了合作办学协议，合作培养覆盖本科到博士各层次。学校在芬兰拉彭兰塔市与拉彭兰塔理工大学合作共建"河北工业大学芬兰校区"，与世界知名大学美国亚利桑那大学共建"河北工业大学亚利桑那工业学院"。学校现有在校中外合作办学项目学生近千人，留学生300余人。

当前，省市部共建为学校搭建了新的发展平台，国家"双一流"建设让学校的发展迈进了"新时代"、踏上了新征程，学校在学科建设、人才培养、师资队伍建设、教学科研等各方面都取得了显著成绩。学校将始终坚持以习近平新时代中国特色社会主义思想为指导，深入学习贯彻落实党的二十大精神，坚持社会主义办学方向，全面贯彻党的教育方针，落实立德树人根本任务，弘扬"勤慎公忠"校训精神，传承兴工报国办学传统，彰显"工学并举"办学特色，扎根中国大地，走内涵发展、创新发展、协同发展之路，努力建设成为国内有重要影响、国际知名的高水平大学，在民族复兴的伟大事业中做出应有的贡献！

EERI 省部共建电工装备可靠性与智能化国家重点实验室
State Key Lab of Reliability and Intelligence of Electrical Equipment

省部共建电工装备可靠性与智能化国家重点实验室始于2003年，2012年被科技部评为优秀省部共建国家重点实验室培育基地，于2017年获批建设省部共建国家重点实验室。实验室以河北工业大学电气工程学科为依托，该学科为国家双一流建设学科，具有"电机与电器"国家重点学科、"电气工程"一级学科博士点、"电气工程"博士后科研流动站。中国电工技术学会电工理论与新技术专委会、电工产品可靠性专委会和生物电工专委会均挂靠在本实验室。
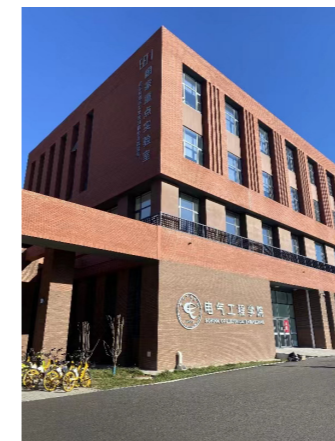
实验室面向国家智能制造和京津冀区域能源发展重大战略需求，围绕电工装备高效、智能、可靠、安全运行的核心目标，在电工装备可靠性与失效机理、电工装备电磁综合效应、先进电工材料微结构与性能调控、电工装备状态感知与智能控制四个研究方向开展基础和应用基础研究，推动我国占领该领域国际制高点，并为我省乃至全国电工装备制造产业的发展提供科技支撑。

韩旭教授担任实验室主任，段宝岩院士担任学术委员会主任。实验室现有固定研究人员61人，其中国家级高层次人才17人，国家级海外优秀人才6人、国家万人计划2人、百千万人才工程国家级人选5人、国家优秀青年基金获得者2人。拥有包括"智能机器人工程服役关键技术"科技部重点领域创新团队在内的2个国家级创新团队和6个省部级创新团队。

实验室现有面积15000余平方米，仪器设备总值1.7亿元，为社会提供仪器设备的开放服务。先后承担了包括国家重大专项、国家重点研发计划、国家自然科学基金重点基金项目在内的国家和省部级科研项目400余项，科研经费达3亿元。获省部级及以上科技奖励21项，在本领域重要学术刊物上发表SCI论文1100余篇，获得专利授权500余项。

实验室作为科研合作与学术交流的平台，与美国、日本、英国、德国、澳大利亚、香港等十多个国家和地区开展了广泛的合作与交流，提升了实验室的科技创新能力和服务支撑能力。依托实验室建设的"电工产品可靠性技术省部共建协同创新中心"被教育部批准建设，"电力设备可靠性与智能化国际联合研究中心"被认定为天津市国际科技合作基地，"河北省现代电工装备与智能化国际联合研究基地"被认定为河北省国际科技合作基地。

实验室以先进仪器设备为支撑，一流高端人才为核心，活跃的学术氛围为特色，已成为国际一流科研平台和高级人才培养基地，在相关研究领域及应用方面充分发挥引领作用。

人工智能与数据科学学院
SCHOOL OF ARTIFICIAL INTELLIGENCE

人工智能与数据科学学院（简称智能学院）于2018年4月成立，由控制科学与工程学院和计算机科学与软件学院合并而成。人工智能正成为新一轮产业变革的核心驱动力，推动经济社会各领域从数字化、网络化向智能化加速跃升，因此发展人工智能已经成为提升国家竞争力、维护国家安全的重大战略。成立"人工智能与数据科学学院"，是学校在人工智能发展进入新阶段的时代背景下，顺应国家科技发展战略、契合智能产业发展对科技和人才需求做出的重要决策，旨在充分发挥控制学科和计算机学科在人工智能领域学科基础和人才培养方面的优势，形成高端人才积聚效应，培养人工智能专业新工科人才，探索智能产业产学研合作的新模式，形成新的学科增长点；更是学校"双一流"建设中优化学科建设布局、促进学科交叉融合发展的重要举措。

目前学院有教职工135人，其中专任教师92人，教授24人，副教授42人，具有博士学位的教师79人。学院拥有控制理论与控制工程河北省重点学科，控制科学与工程博士后流动站，控制科学与工程一级学科博士点和硕士点，计算机科学与技术硕士点，以及电子信息专业学位硕士点；建设有智能康复装置与检测技术教育部工程研究中心、河北省控制工程技术研究中心、河北省大数据计算重点实验室、河北省数据驱动工业智能工程研究中心和虚拟现实与可视计算国际联合中心5个省部级科研平台和天津市虚拟现实与可视计算国际联合研究中心、天津市智能公交车载装备技术工程中心、天津网络新媒体技术研究中心、河北工业大学---新兴重工研究院、央企共建风电系统控制与测试工程研究中心等合作平台；拥有自动化工程国家级教学团队、特殊环境下服役机器人关键技术教育部创新团队、河北省实验教学示范中心、河北省大学生创新创业大数据研究中心。结合京津冀协同发展需求和自身优势，在智能康复装备与技术、高端装备智能感知与先进控制、新能源技术与智能系统、网络化控制与信息安全、数据科学与大数据技术、图像处理与模式识别、机器学习与智能计算、视觉处理与智能计算、知识发现与模式识别等研究方向上形成了良好的科研条件和学科团队；在智能康复辅具、先进电力传动、新能源智能装备制造、大数据、计算机视觉等优势特色领域中居于国内先进行列。近5年来，教师共承担国家及省部级以上课题104项，获科技奖励8项，发表SCI、EI高水平论文445篇，其中6篇为ESI高被引论文。

学院设有自动化、计算机科学与技术、软件工程、物联网工程、数据科学与大数据技术、人工智能、物联网工程（中外合作办学）、计算机科学与技术（中外合作办学）八个本科专业，其中自动化、物联网工程、软件工程专业入选国家一流专业建设点，计算机专业入选河北省一流专业建设点。围绕学校"双一流"建设任务，依托计算机科学与技术开设新工科试点班，重点打造人工智能新特色。学院秉承学校"勤慎公忠"的校训精神和"工学并举"的办学特色，面向京津冀协同发展和雄安新区建设的行业、领域需求，坚持"厚实基础、深化专业、注重理论、突出实践"的人才培养理念，以素质教育、创新教育为核心，以学生德、智、体、美、劳全面发展为宗旨，坚持"学生中心、产出导向、持续改进"的中国工程教育专业认证理念，积极探索产教融合协同育人，不断提升人才培养质量。

学院现有博士生25人，硕士生562人，本科生2146人，学院坚持以学生全面发展为中心，以育人为主线，以培养在专业领域具有较强创新能力的高级工程技术人才为目标，在思想政治教育、科技创新、社会实践、校园文化等一系列活动中取得了优异成绩。近三年来，获"河北省思想政治先进集体"2次、"河北省先进班集体"2次、"天津市五四""天津市五四红旗团支部"1次。学院共组建由教授、青年博士教师、学生组成的社会实践队300多支、科技服务队30多支，11000多人次参加各类社会实践；学生获国家级科技竞赛奖励214人次、省市级科技竞赛奖励547人次，从社会实践中成功转化12个科技创新成果项目；2022年获第十七届"挑战杯"全国大学生课外学术科技作品竞赛国家级二等奖1项。学院"大学生科技协会"团队荣获全国首批大学生"小平科技创新团队"，"爱帮农——我为家乡代言"公益创新创业社会实践项目荣获全国大学生社会实践"强国杯"全国200强、"创青春"大学生创业大赛全国银奖等诸多奖项，得到央视《焦点访谈》、天津日报、河北日报等多家媒体报道；科技作品《智能VR交互机械手平台》被中央电视台《新闻直播间》栏目采访报道；"关于用智能化技术优化工业生产链"被评为2019年全国大中专学生暑期"三下乡"社会实践活动"百篇优秀调研报告"；社会实践团队"防疫青年志愿者队"荣获2020年全国大学生"千校千项"活动基层新画卷称号；《冬奥会效应下崇礼冰雪产业发展的调研与设计》获团中央2021年"三下乡"、"返家乡"社会实践优秀调研报告。

近年来，学院党建工作取得了突出成绩，先后获得2011年度天津市五一劳动先进集体、2012年度河北省教育系统先进基层党组织、2016年度天津市教育系统先进党组织、2020年学校先进基层党组织和"三全育人"先进集体等荣誉称号；2022年获评"第二批天津市党建工作标杆院系创建培育单位"。学院党委坚持"围绕中心抓党建、抓好党建促发展"的工作理念，围绕落实立德树人根本任务，构建"三全育人"工作格局，以党员的先锋模范作用引领学院教风、学风建设，以"两学一做"学习教育成果和"不忘初心、牢记使命"主题教育成效推动学院各项事业跨越式发展。

MEETING MINUTES

会议记录