CURRICULUM VITAE

Yang Yang[a,b]

[a]Key Laboratory of Data Analytics and Optimization for Smart Industry (Northeastern University), Ministry of Education, China

[b]National Frontier Science Center for Industrial Intelligence and Systems Optimization, China

Phone: (+86) 188-0402-4759

yang_cmu@icloud.com

PERSONAL INFORMATION

Name	**Yang Yang**
Date of Birth	April 2rd, 1990
Nationality	Chinese
Gender	Male
Postal Address	135#, NO. 3-11, Wenhua Road, Heping District, Shenyang, China
Expected graduation time	Jan. 2023

Job intention

Postdoc Position

EDUCATION

1/2019 – 2/2020	visiting scholar in Nick Sahinidis's group for developing reviewer recommendation system of Springer digital library, Center for Advanced Process Systems Engineering (CAPD), Carnegie Mellon University, USA.
9/2015 – present	Ph.D. candidate in Logistics Optimization and Control, Institute of Industrial Engineering and Logistics Optimization, Northeastern University, China.
9/2013 – 7/2015	M.S. in Applied Statistics, College of Science, Northeastern University, China.
9/2009 – 7/2013	B.S. in Information and Computing Science, College of Science, Northeastern University, China. B.S. in International Economic Law (Second degree), College of Humanities and Law, Northeastern University, China.

RESEARCH AREAS

1. **Data Science** — High Dimensional Statistical Modeling; Probabilistic graphical models.
2. **Machine Learning** — Deep learning; Data-driven Modeling.
3. **Optimization** — Convex Programming & Optimization; Stochastic Optimization.

PERSONAL SKILLS

Academic research: Python/Matlab/R

Industrial project: C++/C#/SQL

Current interest: Linux

INDUSTRIAL APPLICATIONS

1. **Project: Product quality prediction, control and optimization for process Industry**

   Cooperation: Baosteel Company (The most developed iron and steel company in China)

   Role: Chief engineer and first executor

   Research perspectives:

   1) control reality with virtual; 2) controllability and interpretability; 3) operational optimization; 4) efficiency.

   My Major Work and Workflow (2013-2018, 2020-now):

   1) Survey and project preparation
   2) methodology research
   3) Team building (clarification of responsibilities and assignment of work)
   4) online and offline model development
   5) interface development
   6) software development
   7) communication configuration
   8) debugging and online
   9) patent application
   10) project completion
   11) paper writing and publication

Representative works:

1) Yang Y., Wu J., Song X.M., Wu D.R., Su L.J., Tang L.X., Data-driven Quasi-Convex Method for Hit Rate Optimization of Process Product Quality in Digital Twin, Journal of Industrial Information Integration. (under review, major revision finished)
2) Demo: A demo software developed for the process product quality prediction, control and optimization in process Industry

Future work:

1) In the industrial field, promote completed research and applications.
2) In the academic field, break the boundaries of existing scientific research

2. **Project: Feasibility Research of Deep Learning in Wind Power Forecasting**

Cooperation: China Datang Corporation Renewable Power Co. Limited

Research perspectives:

1) Dynamic deep learning and optimization based on the ample efficiency, generalizability, model composition and incremental updating[1].

Representative works:

1) Yang, Y., Lang, J., Wu, J., Zhang, Y., Su, L., Song, X. (2022). Wind speed forecasting with correlation network pruning and augmentation: A two-phase deep learning method. Renewable Energy, 198, 267-282.

3. **Project：reviewer recommendation system of Springer digital library**

Cooperation: Prof. Dr. Nick Sahinidis, Center for Advanced Process Systems Engineering (CAPD), Carnegie Mellon University, USA.

Research perspectives:

1) Multimodal Data Fusion
2) Unsupervised Text Classification and Clustering
3) Recommendation algorithm

Representative works:

1) Yang Y., Ploskas N., Sahinidis N., Multimodal Text Fusion and recommendation, IEEE Transactions on Automation Science and Engineering. (under review)

RESEARCH PROPOSAL

Inheriting the 3 research topics at the PhD stage, I hope to continue my research in the following 3 directions：

1) Artificial intelligence serving advanced manufacturing systems.
2) Digital twin systems serving advanced manufacturing systems.
3) Human-computer interaction systems serving smart manufacturing and production decision making.

Expected postdoctoral work includes：

1) To study composable neural networks with convex optimization, neural networks that can integrate physical information constraints, and their applications to distributed scheduling.
2) To build impactful open source datasets and code bases in the field of industrial Internet or robotics or autonomous vehicles.
3) To publish relevant research results in top journals and conferences.