Youbang SUN

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Northeastern University
360 Huntington Avenue, Boston, MA 02115

EDUCATION

Northeastern University (Transferred) *Sept. 2021 - Now*
Ph.D. candidate in Department of Machanical and Industrial Engineering Overall GPA: 4.0/4.0
Advisor: Prof. Shahin Shahrampour

Texas A&M University *Sept. 2019 - Aug. 2021*
Ph.D. candidate in Department of Industrial & Systems Engineering Overall GPA: 4.0/4.0
Advisor: Prof. Shahin Shahrampour

University of Science and Technology of China - Honors College *August 2015 - July 2019*
The Talent Program in Computer and Information Science and Technology
Major in Electronic Information Engineering Overall GPA: 3.67/4.30 or 87.15/100
Minor in Computer Science

RESEARCH INTERESTS

Machine Learning, Distributed Optimization, Federated Learning, Control and Dynamical Systems

PUBLICATIONS AND PREPRINTS

5. **On the Stability Analysis of Open Federated Learning Systems**
Youbang Sun, Heshan Fernando, Tianyi Chen, Shahin Shahrampour
The 25th International Conference on Artificial Intelligence and Statistics (AISTATS 2022), Under Review, Oct. 2021

4. **On Centralized and Distributed Mirror Descent: Exponential Convergence Analysis Using Quadratic Constraints**
Youbang Sun, Mahyar Fazlyab, Shahin Shahrampour
IEEE Transactions on Automatic Control (TAC), Submitted, May 2021

3. **Distributed Mirror Descent with Integral Feedback: Asymptotic Convergence Analysis of Continuous-time Dynamics**
Youbang Sun, Shahin Shahrampour
IEEE Control Systems Letters (L-CSS), Accepted, Oct. 2020

2. **Linear Convergence of Distributed Mirror Descent with Integral Feedback for Strongly Convex Problems**
Youbang Sun, Shahin Shahrampour
IEEE conference on Decision and Control (CDC), Accepted, Aug. 2021

1. **Can I trust you more? Model-agnostic hierarchical explanations**
Michael Tsang, **Youbang Sun**, Dongxu Ren, Yan Liu
Arxiv preprint available (1812.04801)

RELEVANT COURSES

Machine Learning
Gaussian Process and Computer Experiments
Learning and Optimization Over Networks
Linear Multi-variable Systems
Probability for Statistics
Convex Optimization
Stochastic Process

TECHNICAL STRENGTHS

Programming Skills	Python, C/C++, R, MATLAB, JavaScript
Deep Learning Frameworks	Pytorch, Keras, Tensorflow
Software & Tools	HTML, LaTeX, Excel, Mathematica, Altium Designer, Keil

HONORS AND AWARDS

Scholarships and Fellowships

- Graduate Scholarship for Outstanding Academic Achievements (Texas A&M University, Industrial and Systems Eng. Department)
- Gold Prize for Undergraduates(Top 5%-10%) (University of Science and Technology of China)
- Guanghua Scholarship for Undergraduates (University of Science and Technology of China)
- Silver Prize for New Undergraduate Students (University of Science and Technology of China)

Competition Awards

- Silver Prize of national level — *National Undergraduate Electronic Design Contest (NUEDC), 2017*
- Gold Prize of provincial level — *NUEDC, 2017*
- Silver Prize of provincial level — *Chinese Physics Olympiad, 2014*

COMMUNICATION SKILLS AND LEADERSHIP

NUEDC *August 2017*
Captain of a team of three

- We took the topic on robotics and built a platform controlling system that satisfies all the requirements
- Worked on control algorithm and object detection via camera

Class project for *Modern Software Engineering* *September 2017 - February 2018*
Captain of a team of six

- We developed an online platform aimed for personal notification management and information distribution of students

Teaching assistant for *Electronic Design* *September 2017 - February 2018*
T.A.

- The course and its experiments are mostly taught by T.A.s instead of teachers

Team project for *SUGAR ME310* *September 2018 - present*
Captain of a team of eight, volunteer at the Global Kick-Off event

- SUGAR stands for Stanford University Global Alliance for Re-design
- This year-long project requires us to cooperate with another team from The Instituto Politcnico do Porto (P.Porto)