KANG LIU

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EDUCATION

University of Michigan, Ann Arbor *Sept 2016 - Present*
PhD in Systems and Control Overall GPA: 4.00/4.00
Department of Electrical Engineering and Computer Science

Harbin Institute of Technology *Sept 2012 - June 2016*
Bachelor of Science Overall GPA: 3.91/4.00
Department of Mechanical Engineering

COURSEWORK

Machine Learning	Stochastic Processes	Function Space Method for System Theory
Deep Learning	Math for Robotics	Probability and Random Processes
Nonlinear Programming	Self-driving Cars	Flight & Trajectory Optimization

PROJECT

Data Reduction for Stochastic Machine Model Jan 2018-Present
PhD thesis related project

- Indicated that for certain functions, the accuracy of estimate of the output can be higher than that for the inputs
- Provide the closed form solution of the optimal data size for system metric estimates of certain level of precision
- Presented results at MIM 2019 Conference held by IFAC and submitted two journals to IEEE TASE and IJPR

Vehicle Routing Problem Solved by Sequential Optimization Aug-Sept 2018
Master project

- Used relaxation techniques to the problem into a tractable standard nonlinear programming problem
- Indicated that the algorithm outperforms discrete optimization methods including dynamic programming
- Presented results at 2019 American Control Conference held by IEEE

Chinese Ancient Painting Coloring Using Generative Neural Networks Sept-Dec 2017
EECS 545 Machine Learning course project

- Implemented Deep Convolutional Generative Adversarial Network (DCGAN), and Wasserstein Generative Adversarial Network (WGAN) on MNIST and CIFAR-10 to generate images
- Compared the two implementation, DCGAN generated images with lower identification error rate

PUBLICATION

P. Alavian, Y. Eun, K. Liu (leading), S. M. Meerkov and L. Zhang (alphabetical order), "The (α, β)-Precise Estimates of MTBF and MTTR: Definitions, Calculations, and Induced Effect on Machine Efficiency Evaluation," Proceeding of the Manufacturing Modelling, Management and Control - 9th MIM 2019, Berlin, Germany.

K. Liu, N. Li, I. Kolmanvosky, A. Girard, "A Vehicle Routing Problem with Dynamic Demands and Restricted Failures Solved Using Stochastic Predictive Control," Proceedings of the 2019-ACC.

P. Alavian, Y. Eun, K. Liu (leading), S. M. Meerkov and L. Zhang (alphabetical order), "The (α, β)-Precise Estimates of MTBF and MTTR: Definition, Calculation, and Observation Time," submitted to IEEE Transactions on Automation Science and Engineering.

P. Alavian, Y. Eun, K. Liu (leading), S. M. Meerkov and L. Zhang (alphabetical order), "Precision of Machine Efficiency and System Throughput EstimatesBased on (α, β)-Precise Estimates of MTBF and MTTR," submitted to International Journal of Production Research.