Yudong Li

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Education

Georgia Institute of Technology Expected Dec. 2025
Master of Science in Computer Science (GPA: 4.00 / 4.00) *Altanta, GA*

- **Relevant Coursework:** ML, DL, RL, AI, CV, Natural Language, Graduate Algorithms, OS, Info Security, Bayesian Stat

The University of Alabama May 2019
PhD in Materials Metallurgical Engineering (GPA: 3.92 / 4.00) *Tuscaloosa, AL*

- **Relevant dissertation work:** Developed and implemented mathmatical models to optimize the physics and chemical conditions of a plasma reactor for material processing.

Experience

National Renewable Energy Laboratory Oct 2019 – Present
Research Engineer/Team Lead *Golden, CO*

- Technical stacks: Python, C++, Pytorch, TensorFlow, Sci-kit Learn, Flask, Vue.js, MongoDB, Qt, CI/CD, MLOps
- Leading a cross-functional team in developing and deploying reinforcement learning algorithms to optimize the operation of different processing reactors.
- Leading a small team of software engineering and technicians to develop deep neural network models for the application of material fast characterization. (Pytorch, TensorFlow)
- Leading the development and implementation of physics based softwares to perform systematic parameter estimation based on various optimization techniques for real-world performance prediction.

The University of Alabama High Performance Computing (UAHPC) group Aug 2018 – Dec 2018
Student Assistant (system admin) *Tuscaloosa, AL*

- Worked as a system admin to assist the daily management, troubleshooting, user training for our high performance computer clusters.
- Assisted major upgrade of the system OS of the UAHPC with testing and fixing breaking changes, software migration issues.
- Developed high performance simulation code using C++ to enable various simulation needs.

Projects

Webapp hosted on company internal network: scalable multi-user cyclic image annotation for dataset generation
Pytorch, TensorFlow, Flask, Vue.js, MongoDB, CI/CD, Kubernetes, github workflow

Machine translation using transformers from ground up
Embedings, implementation and training of transformers

Multi-agent cooperative learning using Proximal Policy Optimization
Pytorch, MAPPO implementation

Multi-modal learning and training of an autonomous driving agent for the AWS DeepRacer environment
Actor-critic models, PPO, Stereo-Vision, LIDAR

Distributed web file server implementation with C and C++
C, C++, Network programming, IPC, gRPC, etc.

Simulation code: modeling packed bed system in chemical processing
C++, Python, SQL [https://doi.org/10.1016/j.cej.2021.128918]

High performance simulation software: modeling the rotation disc mill
C++, [https://doi.org/10.1021/acssuschemeng.1c01773]

Opensource Cluster analysis and visualization code: 3D atomic tomography analysis of solid state materials
Python, Qt - https://github.com/YudongLi90/APT-ClusterAnalysis.git