JIASHUO TONG

209 E University Avenue, Champaign, IL, 61820 ◇ jtong8@illinois.edu ◇ `https://www.github.com/diditong`

EDUCATION

University of Southern California, Los Angeles, CA *Starting Aug. 2020*
M.S. in Computer Science
University of Illinois Urbana-Champaign, Urbana, IL *Aug. 2015 - May 2020*
M.S. in Mechanical Engineering, CSE concentration Current GPA: 3.87
B.S. in Engineering Mechanics, Graduated in May 2018 with High Honor GPA: 3.86
Related Coursework Data Structures, Algorithms, Linear Algebra, Numerical Analysis, Machine Learning, Deep Learning, Database Systems, Data Science & Analytics, Formal Software Devel Methods, Statistics & Probability.

SKILLS

Programming Languages: C++/C, Java, Python, PHP/MySQL, HTML/CSS, Javascript, MATLAB, LaTeX
Frameworks & Platforms: Spark, Hadoop, Panda, PyTorch, Tensorflow, MangoDB, Neo4j, LAMP Stack

PROJECT EXPERIENCE

Google Scholar Data Visualization System *(HTML/CSS, Javascript, MySQL, LAMP, Neo4j)* Jan. 2020 - Current
- Created a web application that extends Google Scholar's ability to visualize a scholar's academic impact.
- Used graph database (Neo4j) to compute the academic family tree & h-index evolution of a scholar.
- Used MySQL database to store scholars' info & implement the basic query functions (insert, select, etc.)
- Developed web front-end using HTML, CSS, and Javascript, and programmed the back-end on a LAMP system.

Big Data Analytics For Autonomous Vehicles (AV) *(Python, Pandas, Hadoop)* Jan. 2020 - Current
- Conducted data processing and cleaning on a log of page faults with 2 million records for analysis.
- Built probabilistic models on an AV database with 1000 testing records to provide insights about AV safety.
- Created a Naive Bayes model on the data to predict the cause of AV disengagements and software malfunctions.

Human Action Recognition in Videos *(PyTorch, Linux)* Dec. 2019 - Jan. 2020
- Used PyTorch to implement an ensemble model which combines single frame and sequence ResNet models.
- Conducted transfer learning on the UCF-101 action recognition data set using a pretrained ResNet model.
- Achieved 83.0 % top-1, and 96.9 % top-5 accuracy on UCF-101; analyzed performance on most confused actions.

Data-Driven Deep Learning Solver *(PyTorch, Tensorflow, Numpy, Linux)* Jul. 2019 - Jan. 2020
- Developed a deep learning solver for differential equations to replace the traditional high-cost algorithms.
- Coded deep neural network models using PyTorch, and finite element solvers using NumPy.
- Used Blue Waters supercomputer to train the model, which achieved an accuracy beyond 99.9%.

Smart Water pH Control System *(Python, Raspberry Pi)* Jan. 2018 - May 2018
- Created and mathematically modeled a control system that automatically adjust pH of water.
- Wrote control software on Raspberry Pi using Python, and convenient GUI using the tkinter module.
- Presented the project results to the sponsors from A.O. Smith Corporation and UIUC faculty members.

Data Analytics on Wettability of Materials *(Excel, MATLAB)* Aug. 2017 - Jan. 2018
- Created data-empowered solutions for measuring contact angles at the solid-liquid interface.
- Collected and analyzed droplet sizes data, ray optics data, etc. using an optical microscope and MATLAB.
- Achieved a similar accuracy as the classical microgoniometry that is expensive and cumbersome.
- Work is published as "In Situ Droplet Microgoniometry Using Optical Microscopy" in ACS Nano.

ACTIVITIES

Teaching Assistant - Dynamics Jan. 2020 - Current
- Teach undergraduate students how to use MATLAB to solve problems involving engineering mechanics.

Senior Engineering Design Project Manager Aug. 2019 - Dec. 2019
- Advised 8 senior engineering design teams on deep learning, numerical analysis, and finite element analysis.
- Hosted 3 successful monthly project presentations with faculty members and industrial sponsors.

Computer-Aided Design (CAD) Mentor Jan. 2019 - May 2019
- Taught CAD techniques using PTC Creo and Solidworks to help students improve their mechanical designs.