

Zhonghua Zheng

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Objective: Data Scientist Intern / Part Time Researcher

Education

- **University of Illinois at Urbana-Champaign (UIUC)** Urbana, IL
Ph.D., Environmental Engineering; Computational Science and Engineering 2020
- **University of Illinois at Urbana-Champaign (UIUC)** Urbana, IL
M.S., Agricultural and Biological Engineering (thesis-based) 2016
- **Zhejiang University (ZJU)** Hangzhou, China
B.Eng., Biosystems Engineering (program ranking: Top 2 in China) 2015

Work Experience

- **Ph.D. Intern, National Center for Computational Sciences** Oak Ridge, TN
Deep Learning, Big Data, High Performance Computing 05/2018 - 08/2018
 - **Affiliation** :Oak Ridge National Laboratory - Advanced Data and Workflow Group
 - **Developed a deep neural network**:Implement TensorFlow with Nvidia GPUs to predict the aerosol mixing state metrics; Prepare two abstracts for professional conference.
- **Data Scientist Intern, Monsanto Company / The Climate Corporation** Champaign, IL
Machine Learning, Spatial Analysis, Big Data 01/2018 - 05/2018
 - **Achievements**:Got the summer intern (05/2018 - 08/2018) offer, Gave two oral presentations for team
 - **Developed anomaly detection algorithms**:Implement different machine learning (e.g., KNN) and anomaly detection (e.g., Isolation Forest) algorithms to detect anomalous field measurements.

Projects Experience (Academic)

- **Evaluation of WRF Parameterizations for Air Quality Applications (Spatiotemporal Analysis)**
 - Simulated meteorological parameters using Weather Research and Forecasting (WRF) model. Utilized Python/NCL and CyberGIS-Jupyter framework for geospatial analytics.
 - Collaborated with the researchers from the CyberGIS Center for Advanced Digital and Spatial Studies (CyberGIS Center), National Center for Supercomputing Applications (NCSA).
- **Impedance-based moisture content sensor assessment for (Model Development, Data Analysis)**
 - Conducted impedance-based sensor tests and analytical chemistry experiments; Developed mathematical and statistical models for estimating moisture contents of biofilter media.
 - Attended the professional conference and gave oral presentation; Published a peer-reviewed article in a top journal of agricultural engineering.
- **Identifying ammonia source and sink profiles within a canopy (Data Visualization/Analysis)**
 - Developed MATLAB code to perform Inverse Lagrangian modeling for estimating fluxes of ammonia.
 - Analyzed and visualized the vertical in-canopy ammonia source/sink profile from the in-canopy vertical profile of ammonia concentration using MATLAB and R.
- **Developed a portable fogging device for disinfection with Slightly Acidic Electrolyzed Water (Data Analysis, Leadership)**
 - Served as a Principal Investigator for a project of National Undergraduate Training Programs for Innovation (\$2000) granted by Ministry of Education of China.
 - Designed the equipment planning diagrams, prototype and tested the efficacy of sterilization; Evaluated the optimal setup parameters for device.
- **2014 ASABE/CSBE Robotics Student Design (Teamwork)**
 - Used Arduino to develop a syrup collecting robotics prototype based on machine vision.
 - Implemented SolidWorks and CAD system to design and 3D print robotics component (end-effectors, spooling, and traveling devices).

Technical Skills

- **Skills**: Python, TensorFlow, R, AWS, ArcGIS, MySQL, Spark, MATLAB, Bash, NCL
- **Ready Knowledge**: Machine Learning, Data Analytics, High Performance Computing