Feng Gao

gaofeng2@msu.edu
Phone: 517-575-5686
Personal website: Fenggmsu.github.io

SUMMARY

- Research experiences with deep learning and data mining algorithms in predicting toxicity of organic compounds
- Research experiences with Torch, TensorFlow and skills in Python/C programming
- Knowledge of big data analytics, visualization and data base
- Strong teamwork and interpersonal skills demonstrated by leadership/contribution in team projects
- Strong written and verbal skills demonstrated by funds application and conference presentations

HIGHLIGHTED SKILLS

- Machine Learning, Deep Learning, Data Mining, Parallel Computing
- Python, C, CUDA C, MPI, MySQL and R programming

RESEARCH EXPERIENCES

- August, 2014 – present **Michigan State University, East Lansing, MI**
  Research Assistant:
  - Applying deep neural network in predicting organic compounds toxicity
    - New feature selection methodology using molecules represented by 3D graph
    - Application of home-made scattering convolution neural network
  - Molecular dynamics simulation study of adsorption in pore structure of activated carbons
    - Potential of mean force calculation using adaptive biased force method
    - Knowledge of writing shell scripts and parallel computing using MPI

- September, 2013- June, 2014 **State Key Laboratory of Coordinate Chemistry, Nanjing University, Nanjing**
  ***Research Assistant*:**
  - Monte Carlo simulation of the influence of sequence length on the crystallization of polymers
    - Home-made Monte Carlo simulation programs
    - Applied OpenMP to parallelize programs

- January, 2013- September, 2013 **Institute of Theoretical and Computational Chemistry, Nanjing University, Nanjing**
  ***Research Assistant*:**
  - Theoretical research and Modeling of modified activate carbons and the adsorption of Hg
    - Gained knowledge of using UNIX system

SELECTED PROJECTS

- **Parallel computing and profiling for molecular dynamics simulations: an MPI approach**
  - Keywords: Message Passing Interface(MPI); Parallel Computing; Profiling
  - Comparing of atom decomposition and spatial decomposition methods for MPI
  - MPI communications analyzed by Multi Process Environment and visualized by jumpshot
- **Analysis and visualization of Amazon video game data**
  - Keywords: Visualization; Network analysis; Gephi
  - Visualization of customers' habits in buying video games
  - Cleaning up raw data for further analysis

EDUCATION

- Michigan State University 2016 – present, East Lansing, USA
  School of Computational Mathematics, Science, and Engineering
  Major: Data Science
  Degree: Ph.D.

- Michigan State University 2014 – present, East Lansing, USA
  Department of Plant, Soil and Microbial Sciences
  Major: Environmental toxicology
  Degree: Ph.D.
  GPA: 3.63/4.0

- Nanjing University 2010 – 2014, Nanjing, PRC
  School of Chemistry and Chemical Engineering
  Major: Chemistry
  Degree: Bachelor of Science
  GPA: 85/100

AWARDS

- Travel funds from Superfund Research Project's Training Core (East Lansing, 2016)
- Gast Soil Science Fellowship (East Lansing, 2016)
- Best poster award in the 3rd National Chemistry Undergraduate Symposium (Chengdu, 2013)
- Third Grade Award of People's Scholarship (Nanjing, 2013)
- Third Grade Award of People's Scholarship (Nanjing, 2012)
- Third Grade Award of People's Scholarship (Nanjing, 2011)
- National C-language Certificate (Nanjing, PRC, level 2)
- 2013 Mathematical Contest in Modeling by COMAP: Successful Participant

PUBLICATION AND CONFERENCES

- *"Toxicity prediction using scatter convolutional neural network", in preparation*
- *"Influence of activated carbon pore structures on the adsorption of dioxin", in preparation*
- *Feng Gao, Tian-Yuan Zhang, Zhao-Xu Chen*, Rodolfo Abraham Monterrozo, Maohong Fan**, Morris D. Argyle, Armistead G. Russell*
  "Theoretical Study on the Enhancement Mechanism of $FeCl_3$-impregnated Activated Carbons on Adsorption of Hg0", submitted to ES&T
- The 7th Chinese Coordination Chemistry Conference (held in July, 2013 in Beijing)