Jianfeng Zhang

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EDUCATION

Wuhan University — Wuhan, China
Bachelor of Science in Applied Mathematics; GPA: 3.64; Ranking: 3/42 — *Sep. 2014 – Jun. 2018*

RESEARCH EXPERIENCE

Image Segmentation Algorithm Based on Alternating Descent Solver — Wuhan University, China
Research Assistant — *Mar. 2018 – Present*
- Built a Mumford-Shah-like model framework for interactive image segmentation.
- Applied geodesic distance in LAB space to build unary term and utilized L1, L2 total variation, and fast-bilateral-solver-like regularization as pairwise term.
- Developed an approach to optimize unary and pairwise terms alternately to perform image segmentation. This algorithm can reach 0.8 mean IoU in graphcut dataset with little interaction.

Long Short-Term Memory (LSTM) for Water Table Depth Prediction — Wuhan University, China
Research Assistant — *Apr. 2017 – Jan. 2018*
- Developed a LSTM-based model to forecast water stable depth in Hetao Irrigation District. The final best model achieved 0.93 R^2 score on prediction tasks.
- Built a GUI to construct a decision system based on this model, to aid engineers and decision-makers to plan and manage groundwater resources in Hetao Irrigation District.
- Our research was published in **Journal of Hydrology**, and I served as first author.[Paper] [Code]

WORK EXPERIENCE

Farsee2 Inc. — Wuhan, China
Research Intern with Dr. Xiaoping Zhang — *Nov. 2017 – Present*
- Built a video object segmentation framework based on CNN and user interaction. this framework is currently embedded in company products.
- Reviewed current semantic and instance segmentation models and built a model based on deformable convolutional network and ConvCRF for instance segmentation.

SinoCLC Inc. — Beijing, China
Data Mining Intern — *Jul. 2017 – Sep. 2017*
- Developed a web crawler to collect daily text data from Weibo and News Websites using Python with Scrapy.
- Built a text classification system using CNN, RNN and Word Embeddings to help data analysts find news of interest efficiently.

PROJECTS

- **ICPR MTWI 2018 Challenge on Tianchi** — *Mar. 2018 – May. 2018*
  - Built a faster-rcnn like model for end to end network image text detection and recognition. This model Ranked 13/1488 on Tianchi Challenge.
- **Machine Learning Seminar** — *Oct. 2017 – Present*
  - Organized weekly machine learning seminar in Wuhan University, including professors and students.
  - Gave talks about convex optimization, deep learning and their applications.

TEACHING EXPERIENCE

- **C Programming Language** — *Spring 2017*
- **Data Structures and Algorithms in Python** — *Fall 2017*

PROGRAMMING SKILLS

- **Languages: Python, MATLAB, C/C++, R**
- **Deep Learning Tools: PyTorch, Tensorflow, Keras**