Tian Gao

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Seeking 2021 Summer Intern: Software Engineer / Data Scientist / Machine Learning Engineer

Education

- **University of Nebraska - Lincoln** — Lincoln, NE
  Ph.D. in Computer Science, GPA: 3.896 — *Aug. 2016 - Dec. 2021 (expected)*
  - **Research Field**: Computer Vision, Image Processing, Machine Learning, Data Mining
  - **Related Courses**: Data Structure / Algorithm Design, Parallel Programming, Pattern Recognition
- **University of Science and Technology of China** — Hefei, China
  M.S. in Computational Mathematics — *Sept. 2009 - Jun. 2012*
- **AnHui University** — Hefei, China
  B.S. in Computational Mathematics, GPA: 3.62 — *Sept. 2005 - Jun. 2009*

Experience

- **University of Nebraska - Lincoln** — Lincoln, NE
  Research Assistant — *Aug. 2016 - Present*
  - Headed the design and implementation of an end-to-end solution to plant traits extraction problems using imaging processing and computer vision algorithms
    - Closely cooperated with plant scientists and mechanical experts in customized design with rapid iteration
    - Developed imaging processing algorithms to extract traits from millions of images up to 30 TB
    - Deployed computer vision algorithms to achieve precise representation of plants in 3D space using Structure-from-Motion (SfM)
    - Created a web-based tool visualize and analyze the 3D structure of plants using three.js
  - Designed and deployed algorithms and online applications to solve scientific problems in cancer research
    - Implemented algorithms to identify patterns with statistical significance using cancer gene data
    - Built an interactive website for users to utilize the algorithms above using Tornado
  - Utilized: Python, Matlab, HTML, JavaScript, Git, C/C++
- **E-commerce China Dangdang Inc. (dangdang.com)** — Beijing, China
  Full-time Software Developing Engineer — *Jul. 2012 - Aug. 2014*
  - Led a team to prevent fraud by implementing machine learning algorithms on user purchasing records
    - Collected data and extracted traits from 30 million purchasing records using Hadoop
    - Implemented Logistic Regression models for fraud prediction
    - Optimized the accuracy of the generated model and detected up to 90% of fraud
  - Developed machine learning algorithms to improve product recommendation
    - Implemented Logistic Regression models on clicking data from 7 million users
    - Utilized A/B testing for evaluation and increased CTR(click-through-rate) by 20%
  - Designed software documentation and collaborated document writing/review
  - Collaborated monthly code review as a reviewer/reviewee actively
  - Won Best New Programmer Prize, 2012
  - Utilized: Python, HTML, SVN, Hadoop, SQL

Selected Research Articles

- T.Gao, J.Sun, F.Zhu, et al., *Plant Event Detection from Time-Varying Point Clouds.*, Big Data, 2019
- J.Sandhu, F.Zhu, P.Paul, T.Gao, et al., *PI-Plat: a high-resolution image-based 3D reconstruction method to estimate growth dynamics of rice inflorescence traits*, Plant Methods, 2019
- T.Gao J.Shu, J.Cui, *A systematic approach to RNA-associated motif discovery*, BMC genomics, 2018

Skills

- Programming
  - **Expert**: Python, MATLAB, Linux Shell
  - **Advanced/intermediate**: JavaScript, HTML, CSS, C/C++, Java, SQL, Lua, R
- Tools: Latex, Hadoop, NumPy, SciPy, matplotlib, Tornado, three.js, Git, SVN, Vim, Docker, markdown