

Tianzi Wang

wtianzi@gmail.com

EDUCATION

1/2016-present *Ph.D. Candidate, Industrial and Systems Engineering*

Virginia Polytechnic Institute and State University

Program: **Cognitive Engineering**

- Virtual reality in health care domain, using virtual reality to mitigate addictions.
- Human robot interactions, UX research of the unmanned aerial vehicle in search and rescue domain.

1/2016-12/2019 *M.S., Industrial and Systems Engineering*

Virginia Polytechnic Institute and State University

Program: **Human Factors Engineering and Ergonomics**

9/2008-1/2011 *M.S., Computer Science*

China Agricultural University (CAU), Beijing, China

Program: **Machine Learning and Pattern Recognition**

Thesis: Near Infrared Transmission Technology in Liquid Dairy Products Quality Detection.

Design and implement the hardware for near infrared based liquid analysis; develop the data acquisition and analysis software; apply the multivariate statistical and machine learning method for yogurt classified.

9/2005-7/2008 *B.S., Science*

China Agricultural University (CAU), Beijing, China

Program: Honors Program

Graduated one year ahead of schedule, and was recommended to the Graduate School.

Thesis: Evaluation of the egg freshness by computer vision.

Spring 2019 *Graduate Certificate*

Graduate Certificate - Human-Computer Interactions Certificate

EXPERIENCE

Graduate Assistant Experience

1/2016—5/2017 Teaching assistant, Graduate research assistant

6/2017—12/2018 Office of Academic Decision Support, Virginia Tech

LOC: Python, SQL

CV parsing

- Parse CV files of multiple format, including docx, pdf, latex, txt, html.

Website design

- Design websites for student data visualization using Django, SSRS and ASP.NET,

Elements custom reports generating program

- Design program for generating custom reports for individual faculty or organization.

1/2019—present Research assistant

Working Experience

3/2011—8/2014 Tsinghua Tongfang Knowledge Network Technology (CNKI), Beijing

Software Engineer Outstanding Staff

LOC: C++, Python, SQL

Academic/Patent image extraction

- Design multiple robust methods to extract images from different file formats and different layouts, by which 30million pictures from 57million journals/patents/thesis since 1994. An automatic processing tool for daily update and database synchronization is also developed to support several departments.
- Propose and implement automatic processing tools for image quality evaluation.

Content based image retrieval

- Design the major algorithm of the image retrieval, including the feature extraction methods, the fingerprint indexing methods and fast retrieval method. In particular, both the context information and the shape information of images are extracted and stored as fingerprint.
- Design the architecture for online image retrieval service. The database based fingerprint search is spotted to be the bottleneck of the whole procedure, therefore a distributed architecture which involves multiple slices of databases as well as search result combination was developed. The average response time is improved from 5000ms to 200ms.

Data maintenance

- Design the data storage method, routine database maintenance, and several relevant test coding.
- Develop tools to optimize the performance and user experience, e.g., 3D displays plug-in, image difference displays plug-in, different optical character recognition methods evaluating tools, et al.

Awards and Honors

● **Virginia Tech**

HealthCare AppJam Competition – HoloLens for Medical applications 2nd place

2017

SKILLS

- Programming Languages: C++, Python, C#, SQL, JavaScript.
- Software: Visual Studio, Unity3D, JMP.
- Specialty: human factors, virtual reality, UX research, web design, computer vision, machine learning

PUBLICATIONS

- [1] Tianzi Wang, Limin Zheng, Lijun Tian, Ping Wu, Hong Zhu, Fazheng Ren (2010). Analysis of milk and dairy products by near-infrared spectroscopy: a review. *Spectroscopy and Spectral Analysis*, 30(12), 3208-3212.
- [2] Tianzi Wang, Zheng Song, Jian Ma. An anti-fake iris authentication mechanism for Smart Glasses. *Consumer Electronics, Communications and Networks (CECNet)*. 20-22 Nov. 2013. (EI)
- [3] Wenjing Ling, Limin Zheng, Tianzi Wang, Zheng Song. Smartphone-based Video Surveillance System [J]. *Journal of Computational Information Systems*, 2014, 10(17): 7637-7644. (EI)
- [4] Fang, Y., Chen, X., Song, Z., Wang, T., & Cao, Y. (2017). Modelling Propagation of Public Opinions on Microblogging Big Data Using Sentiment Analysis and Compartmental Models. *International Journal on Semantic Web and Information Systems (IJSWIS)*, 13(1), 11-27.
- [5] Liu, Y., **Wang, T.**, Zheng, L., & Yang, L. (2019, July). Facial-image based Age Estimation Using Imbalanced Datasets. In *Journal of Physics: Conference Series* (Vol. 1267, No. 1, p. 012012). IOP Publishing.