

Ziyi Huang

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EDUCATION

School of Software, Tsinghua University

Sep 2016 - Jul 2019

Department of Mathematical Sciences, Tsinghua University

Sep 2014 - Jul 2016

B.E. in Software Engineering

- Relevant Coursework: Data Structure and Algorithm (1)(2), Software Engineering, Probability and Statistics, Abstract Algebra

RESEARCH EXPERIENCE

Study of analysis and evaluation methods on enterprise indicators | Research Assistant

Mar 2019 - Jul 2019

Advisor: Chunping Li, Associate Professor, School of Software, Tsinghua University

- Built a new data analysis tool based on a recently proposed algorithm Non-redundant K-Means
- Analyzed enterprise data in production environment with the new data analysis tool and other analysis methods like comparative analysis and multi-dimensional disassembly analysis to cluster enterprises into multiple types
- Wrote a data analysis report with many quantitative and visual results for government officials
- Established an enterprise classification model according to the needs of a government information platform

Topic discovery with image & text multimodal data in social media | Research Assistant

Jun 2018 - Mar 2019

Advisor: Chunping Li, Associate Professor, School of Software, Tsinghua University

- Collected image-text pairs from the Chinese social platform, Weibo, and established a dataset accordingly
- Carried out data preprocessing work by ruling out invalid images, data alignment and normalization
- Designed a semi-supervised learning method based on Label Propagation Algorithm for better image caption auto-filling
- Designed a new model based on LDA and cv2txt (proposed by Google) to solve the Cross-Modal Topic Discovery mission

Style based Image Generation based on GANs | Research Assistant

Apr 2018 - Apr 2019

Advisor: Yushen Liu, Associate Professor, School of Software, Tsinghua University

- Grasped basics of CNN, GAN, and Deep Convolutional GAN
- Built an image generation model based on GAN which can migrate styles from given images, and has achieved success in some simple scenes (e.g., image with single object with simple background)

PROJECT EXPERIENCE

Hyper SQL Database System Optimization | Team Leader

Mar 2018 - Jun 2018

- Analyzed TPC-C standard and its performance defects on Hyper SQL Database (HSQLDB)
- Added cache and altered the join algorithm from Index Nested Loop Join to Block Nested Loop Join in order to improve the

performance of 'select' queries with join operations

- Benchmarked the new join algorithm with TPC-C standard and observed 35% - 90% query time cost

Face Verification Applications in person re-identification (ReID) | Team Leader

Oct 2017 - Jan 2018

- Led a three-student team to design and construct a model based on FaceNet to solve the ReID mission
- Trained the model and adjusted the parameters on Labelled Face in the Wild (LFW) and WebFace datasets
- Evaluated the model on the test set and achieved 90% identification accuracy

OpenAI Gym and Evennia MUD integration | Independent

Feb 2017 - Jun 2017

- Integrated the Evennia, a MUD game management framework, and OpenAI Gym, a reinforcement learning toolkit
- Added APIs to Evennia in order to set environment, action functions and parameters automatically in OpenAI Gym

Conference Registration and Management System | Team Leader

Oct 2016 - Jan 2017

- Followed the principle of software engineering to complete a conference registration and management system
- Implemented functions including conference registration, release, publicity, payment and managements
- Conducted process including demand acquisition and analysis, designed prototype diagram of UI, unit and functional test
- Highly praised by client and obtained the highest score with high quality final product release

SKILLS

Programming Languages: C (Advanced), Java (Intermediate), Python (Intermediate), C++ (Intermediate), SQL (Intermediate), Haskell (Beginner)

Frameworks: Matplotlib & Seaborn, TensorFlow, Django, PyTorch, JDBC, Unity3D

Language Skills: Chinese Mandarin (native), English (fluent)

AWARDS

- 1st prize in National Olympiad in Informatics for high school students (Beijing Area) *2011, 2013*
- 1st prize in National High School Mathematics League (Beijing Area) *2012*

Teaching Experience

Mathematics Competition Teaching

Nov 2014 – Sept 2016

- Works included camp training, lectures, and examinations
- Achieved excellent results, my students won a lot of awards in National High School Mathematics League, Chinese Mathematical Olympiad, and international Mathematical Olympiad.

Tutor for mathematics in Junior and Senior High

Aug 2014 – Dec 2014, Jul 2019 – Now

- Made courseware and PowerPoint.
- Was highly praised and advertised by students' parents.