YANGKAI DU

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EDUCATION

Zhejiang University   *July 2017 - June 2021*
B.ENG. in Computer Engineering, Zhejiang University
Overall GPA: 3.93

University of Illinois at Urbana-Champaign   *July 2017 - June 2021*
B.S. in Computer Engineering, University of Illinois at Urbana-Champaign
Overall GPA: 3.85

RESEARCH EXPERIENCE & PROJECTS

Commonsense knowledge based dialogue generation
Advisor: Pengtao Xie   *June 2020 - Present*
· The research intends to leverage commonsense knowledge in dialogue generation.
· We fine-tuned OpenAI GPT-2 model/Bart model for automatic commonsense knowledge generation and leverage novel pretraining methods to improve the quality and novely of generated knowledge triples.
· We implement a hash coding based model for efficient commences knowledge retrieval, and train the model end-to-end for dialogue generation with policy gradient.

knowledge graph construction for intelligent maintenance of power plant
Advisor: Hongwei Wang   *April 2019 - Present*
· The research intends to propose a novel process of automatic construction and reasoning of knowledge graphs based on AI to support the intelligent maintenance of complex power equipment.
· We explores Bi-LSTM-Lattice model on entities extraction and Multi-grained lattice model on relation extraction.
· Our paper got **Best Paper Award** on ICEBE 2019.

Operating System from Scratch
Courese Work   *Oct 2019 - Dec 2019*
· Course Project of Computer System Engineering. Implement a X86-based operating system from scratch. The soucre code can be found here.
· Implement memory paging and segmentation, system calls and interrupt handlers, scheduling of processes based on Round Robin scheme and hardware drives for keyboard, mouse and RTC.

Face recognition on a small scale of data
Advisor: Haoji Hu   *June 2018 - July 2018*
· The research project intends to propose a novel neuro-based model to improve the performance of face recognition task under small scale of training data.
· Learned basic concepts and techniques of neuro network and pattern recognition.

PUBLICATION

knowledge graph construction for intelligent maintenance of power plant
Yangkai Du, Jiayuan Huang, Shuting Tao, Hongwei Wang. Advances in E-Business Engineering for Ubiquitous Computing. ICEBE 2019. Lecture Notes on Data Engineering and Communications Technologies, vol 41. Springer, Cham.

SKILLS

Programming Languages	Python, C, C++
Packages & APIs	Pytorch, Tensorflow, Keras, Numpy
Tools	Git, Shell, Latex, Matlab

SELECTED HONORS & AWARDS

Nomination Award for Top Ten students Research Achievements of Zhejiang University	2020
Best Paper Award ICEBE2019. Awarded to 2 out of all the submissions	2019
Third-class Scholarship of Zhejiang University	2019
Best Summer Research Projects/Internship of Zhejiang University/University of Illinois at Urbana Champaign Institute	2019
Third-class Scholarship of ZJUI	2019
Academic Excellent Individual of Zhejiang University	2019
Third-class Scholarship of ZJUI	2018

RELEVANT COURSES

ECE120-Intro to Computing   A
learned about assembly language and some basic concepts of machine-level architecture

ECE220-Computer Systems Programming   A
learned about assembly language and basics of C Programming

CS225-Data Structures   A
learned concepts and applications of basic data structures, implementing data structures with C++

ECE374-Algorithms Models of Computation   A
learned design and analysis of algorithms, computability and dynamic programming.

ECE391-Computer System Engineering   A
learned concepts of x86 based operation system design and system programming skills. Implement an operation system from scratch.

ECE448-Artificial Intelligence   A
learned basic concepts of AI, neuro network and reinforcement learning. Implement AI algorithm with pytorch.

CS447-Natural Language Processing   A
learned basic concepts of computational linguistics, from morphology, syntax to semantics, NLP applications such as syntax parsing, machine translation,sequence generation and dialog systems.

EXTRA-CURRICULAR

Teaching Assistant of Intro to Differential Eq Plus   2020 Spring

- Holding Discussion Session and providing tutoring

- Grading Homeworks and Exams

Teaching Assistant of University Physics: Elec Mag   2020 Fall