SHANGMIN (SHAWN) GUO

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PUBLICATIONS

- The Emergence of Compositional Languages for Numeric Concepts Through Iterated Learning in Neural Agents
  Shangmin Guo, Yi Ren, Serhii Havrylov, Stella Frank, Ivan Titov & Kenny Smith
  3rd NeurIPS Workshop on Emergent Communication
- Enhance the Compositionality of Emergent Language by Iterated Leanring
  Yi Ren, **Shangmin Guo**, Matthieu Labeau, Shay B. Cohen & Simon Kirby
  3rd NeurIPS Workshop on Emergent Communication
- IJCNLP-2017 Task 5: Multi-choice Question Answering in Examinations
  Shangmin Guo, Kang Liu, Shizhu He, Zhuoyu Wei, Cao Liu & Jun Zhao
  IJCNLP-2017
- Which is the Effective Way for Gaokao: Information Retrieval or Neural Networks?
  Shangmin Guo, Xiangrong Zeng, Shizhu He, Kang Liu & Jun Zhao EACL-2017
- Employing External Rich Knowledge for Machine Comprehension.
  Bingning Wang, **Shangmin Guo**, Kang Liu&Jun Zhao IJCAI-2016

PROJECTS

SpikeInterface: A Unified Framework for Spike Sorting

Sep. 2019 – Edinburgh, UK

- Perform unit testing and integrated testing, and fix the detected bugs.
- Design and develop middlewares for processing data in various formats.
- This is an open-source project which can be accessed [here].

Emergence of Compositional Languages for Numeric Concepts in Multi-agent Autonomous Communication

Jan. 2019 – Sep. 2019 Edinburgh, UK

- Proposed this project to explore the emergence of compositional languages for numeric concepts in multi-agent communication protocols.
- Designed and implemented multi-agent population models based on deep learning, as well as two different language games.
- Found that iterated learning could facilitate the emergence of compositional language, and their emergence are heavily influenced by input representations.
- Found that emergent languages from different language games have different expressivity.
- This work has been submitted to EvoLang-2020 and ICLR-2020.

Automatic Medical Record Generation based on Doctor-Patient Dialogue

Mar. 2018 – Aug. 2018 Beijing, China

- Designed the schema of a new medical knowledge base and implemented an information gain algorithm to do diagnosis on it.
- Led the development of a disease tag prediction system based on the utterances of doctor-patient dialog.

WORKING EXPERIENCE

Research Assistant

Institute for Adaptive and Neural Computation, School of Informatics

Sep. 2019 – Edinburgh, UK

Research Engineer

National Laboratory of Pattern Recognition

Oct. 2015 – Aug. 2018 Beijing, China

Department Administrative Officer (Part-time)

Department of Computer Science, College of Computer Science and Technology

Feb. 2011 – Jan. 2012 Changsha, China

EDUCATION

M.Sc. (Distinction) in Data Science

Avg Score: A

The University of Edinburgh

Sep. 2018 – Aug. 2019 Edinburgh, UK

B.Eng. in Computer Science

Rank:1^{st}/66 |GPA:3.88/4.0|Avg Score:87.20/100

National University of Defense Technology

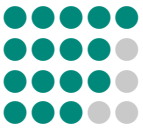
Sep. 2010 – Jun. 2014 Changsha, China

RESEARCH INTERESTS

Evolutionary Linguistics
Grounded Language Learning
Natural Language Understanding

PROGRAMMING SKILLS

Python/PyTorch/LaTeX
C++/Java/Django/Qt5
Distributed Computing
CUDA/R



HIGHLIGHT COURSES

Probabilistic Modeling and Reasoning
Computational Cognitive Science
Reinforcement Learning
Algorithmic Game Theory

Question Answering System for Gaokao History Multiple Choice Questions

Oct. 2015 – Oct. 2017 Beijing, China

- Designed and developed a novel deep neural network model that is combined with IR method, which gained best performance on real Gaokao questions in subject History.
- Implemented various kinds of baseline models including memory networks and dynamic memory networks.
- This work has been published on EACL-2017.

Employing External Rich Knowledge for Machine Comprehension

Oct. 2015 – Feb. 2016 Beijing, China

- Developed a RTE model that is trained on rich external corpus and then be applied to evaluate the confidence of a specific answer candidate in machine comprehension.
- This work has been published on IJCAI-2016.

Research and Analysis of Behavior Modeling in Simulation System

Oct. 2013 – Jun. 2014 Changsha, China

- This is my diploma project, the overall objective is to build a distributed interactive simulation system. I took the responsibility of research and analysis of the behavior modeling.
- Concluded the methods of behavior modeling and abstracted them with first-order sequential logic.
- Built up several behavior models in different scenarios and checked feasibility of these models.

REFEREES

Prof. Kenny Smith
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Prof. Stuart Anderson
@ soa@staffmail.ed.ac.uk
Schools of Informatics, University of Edinburgh

Prof. Jun Zhao
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Chinese Information Processing Group, Institute of Automation, Chinese Academy of Sciences

LIFE PHILOSOPHY

"Truth can be known but it may not be the well-known truth."

HOBBIES

Paintball
Archery
Racing Car