Zijiao Yang
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EDUCATION

Oregon State University — **Corvallis, USA**
Ph.D. Student in Computer Science. GPA: 4.0/4.0 — *Sep. 2020 - Present*

University of Colorado Boulder — **Boulder, USA**
Master of Science in Computer science. GPA: 3.91/4.0 — *Aug. 2018 - Aug. 2020*

Ritsumeikan University — **Kusatsu, Japan**
Bachelor of Engineering in Information Science and Engineering, Department of Human and Computer Intelligence GPA: 4.3/5.0 — *Sept. 2014 - Sept. 2016*

Dalian University of Technology — **Dalian, China**
Bachelor of Engineering in Software Engineering (Japanese Intensive) — *Sept. 2012 - Sept. 2016*

Related Courses: Computational Lexical Semantics, Machine Learning, Natural Language Processing, Convex Optimization, Bio-inspired Multi-Agent System, Principle of Numerical Computation, Statistical Data Analysis, Data Structure, Operating Systems and Compiler.

RESEARCH EXPERIENCE

Consistent Intent and Action Generation for Subject in a Scene, Oregon State University — **Corvallis, USA**
July. 2020 - Present

- Examine the intentions and actions of people in visual scenes.
- Train model to generate a subject's intent and actions before and after an observed scene.
- Enforce consistency between intent and before/after actions leveraging natural language inference techniques.

Multi-Modal Semantic Role Labeling, University of Colorado Boulder — **Boulder, USA**
Oct. 2019 - May. 2020

- Explored how incorporating visual context can improve semantic role labeling (SRL).
- Automatically generated train, validation text data with state-of-the-art SRL model and obtained corresponding image features from MSCOCO train split.
- Developed techniques to align multimodal representations via a contrastive loss and directly combining image-text via an attention mechanism.
- Demonstrated improvements in SRL compared to text-only baseline on human-annotated test split data and showed SRL prediction improves on location-related roles during analysis.

Emergent Language in The Honeybee Site Selection Game, University of Colorado Boulder — **Boulder, USA**
Mar. 2019 - Apr. 2019

Team member

- Proposed hypotheses of bee dance as a language, investigated its properties and hypotheses of bee site selection, formulated bee game description, and implementation.
- Proposed hypotheses on the mechanism of the bee "persuading others" to be scouts or vote on a site location. Designed reward function reflecting hypotheses.
- Simulated the Bee site selection game with an end-to-end differentiable model of bees and environment state dynamics over time based on an existed framework on study multi-agent systems. Analyzed simulated bee agent behavior and dynamics of vocabulary used by bee agents.

AWARDS

Lloyd Botway Fellowship, University of Colorado Boulder, 2020

- Selected as one of three outstanding master's students for excellence in research and service.

Special Encouragement Scholarship, Ritsumeikan University (full tuition waiver 2015)

SKILLS

Technical: C, Python, Matlab, Pytorch, Keras, Ruby, Racket, Standard ml, R Language, Convex Programming.
Language: English (fluent), Mandarin (native), Japanese (fluent).