

# Jiashu Xu

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## EDUCATION

### Harvard University

Master's in Computational Science and Engineering

Cambridge, USA

September 2022 - June 2023

### University of Southern California

B.S. in Applied Math & Computer Science, GPA: 3.97/4.0

Los Angeles, USA

August 2020 - June 2022

### University of California, Irvine

B.S. in Applied Math & Computer Science, GPA: 3.984/4.0

Irvine, USA

September 2018 - August 2020

### Hong Kong University of Science and Technology

UCEAP summer study abroad, study robotics, GPA: 4.0/4.0

Hong Kong, China

June - August 2019

**Awards:** Center for Undergraduate Research in Viterbi Engineering Fellowship, Jennifer Battat Scholarship, USC Transfer Merit Scholarship, USC Academic Achievement Award, USC & UCI Dean's List (all semesters)

## RESEARCH INTEREST

▶ Transparent and robust AI system in NLP domain; high-level supervisions for model regularization

## PUBLICATION

### [1] SalkG: Learning From Knowledge Graph Explanations for Commonsense Reasoning

Aaron Chan, **Jiashu Xu**, Boyuan Long, Soumya Sanyal, Tanishq Gupta, Xiang Ren

*Conference on Neural Information Processing Systems (NeurIPS)*, 2021.

[code](#) [paper](#)

### [2] Dissection Gesture Sequence during Nerve Sparing Predicts Erectile Function Recovery after Robot-Assisted Radical Prostatectomy

Runzhuo Ma, **Jiashu Xu**, Ivan Rodriguez, Gina DeMeo, Aditya Desai, Loc Trinh, Jessica H. Nguyen, Anima Anandkumar, Jim C. Hu, Andrew J. Hung

*American Urological Association Annual Conference (AUA)*, 2022. Under review.

[abstract](#)

### [3] Dissection Assessment for Robotic Technique (DART) to Evaluate Nerve-Spare of Robot-Assisted Radical Prostatectomy

Runzhuo Ma, Alvin Hui, **Jiashu Xu**, Aditya Desai, Michael Tzeng, Emily Cheng, Loc Trinh, Jessica H. Nguyen, Anima Anandkumar, Jim C. Hu, Andrew J. Hung

*American Urological Association Annual Conference (AUA)*, 2022. Under review.

[abstract](#)

### [4] Unified Semantic Typing with Meaningful Label Inference

James Y. Huang, Bangzheng Li\*, **Jiashu Xu\***, Muhao Chen

*North American Chapter of the Association for Computational Linguistics (NAACL)*, 2022.

### [4] Neural-Sim: Learning to Generate Training Data with NeRF

Yunhao Ge, **Jiashu Xu**, Harkirat Behl, Suriya Gunasekar, Neel Joshi, Yale Song, Xin Wang, Laurent Itti, Vibhav Vineet

*European Conference on Computer Vision (ECCV)*, 2022. Under review.

### [5] Language-Driven Compositional Context Image Synthesis for Object Detection

Yunhao Ge, **Jiashu Xu**, Laurent Itti, Vibhav Vineet

*European Conference on Computer Vision (ECCV)*, 2022. Under review.

### [6] EXACT: Compositional Augmentation for Image-level Weakly-Supervised Instance Segmentation

**Jiashu Xu\***, Yunhao Ge\*, Brian Nlong Zhao, Laurent Itti, Vibhav Vineet

*Conference on Neural Information Processing Systems (NeurIPS)*, 2022. Under review.

### [7] X-Norm: Exchanging Normalization Parameters for Bimodal Fusion

**Jiashu Xu\***, Yufeng Yin\*, Tianxin Zu, Mohammad Soleymani

*ACM International Conference on Multimodal Interaction (ICMI)*, 2022. Under review.

## RESEARCH EXPERIENCE

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**LUKA Lab @ USC Information Sciences Institute**, CURVE research fellow

*Los Angeles, USA*

*Advisor: Professor Muhao Chen*

*August 2021 - Present*

○ **Zero-shot Inference in Event Detection with Contextual Gloss**

- Generated contextual gloss for each event type by word sense disambiguation neural model Extractive Sense Comprehension (ESC)
- Enhanced pretrained language models' zero-shot inference capacity by providing contextual gloss as intermediate semantic-rich knowledge for labels

**IHP Lab @ USC Institute for Creative Technologies**, Research Assistant

*Los Angeles, USA*

*Advisor: Professor Mohammad Soleymani*

*August 2021 - Present*

○ **Synthetic-to-real Transfer Learning for Action Recognition**

- Experimented recently published action recognition baselines on three widely used datasets
- Explored various directions for knowledge transfer including domain adaptation and style transfer

**INK Lab @ USC Information Sciences Institute**, Research Assistant

*Los Angeles, USA*

*Advisor: Professor Xiang Ren*

*January 2021 - Present*

○ **Enhance KG-augmented Model Using Saliency Explanation**

- Implemented variants of SalKG training framework including end-to-end training using KL divergence to regularize model and introducing BCE loss for SalKG-Fine model
- Integrated CODAH and QASC datasets into codebase and conducted extensive experiments on four commonly used QA benchmarks

**Melady Lab @ USC**, Research Assistant

*Los Angeles, USA*

*Advisor: Professor Yan Liu*

*July 2021 - Present*

○ **Dissection of Gesture Sequence to Predict Erectile Function Recovery**

- Developed classification system based on long-term dependencies among robot gesture sequences of nerve-sparing, using IMV-LSTM and an attention transformer model adopted from Informer
- Introduced attention-based occlusion explanation to identify “bad smell” of subsequences of gestures that could potentially help surgeons refine skills
- Incorporating patient’s clinical data into neural tabular model including AutoInt, TabTransformer and FT-Transformer and achieved 64 AUC on holdout dataset with solely clinical features

## WORK & TEACHING EXPERIENCE

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**Learning Assistant**

*Los Angeles, USA*

*CSCI 567: Machine Learning with Professor Haipeng Luo*

*Fall 2021*

- Held Office Hours, monitored piazza to answer students’ questions regarding math and code implementation and graded homework and projects

**Teach for Los Angeles**

*Los Angeles, USA*

*Mentor*

*Spring 2021*

- Tutored middle school students from LA K-12 community 1-on-1 on mathematics two hours every week
- Inspired students to reach full math potential in preparation for college and STEM careers

**Johnson & Johnson**

*Shanghai, China*

*Digital & Analytics Data Assistant*

*Summer 2019*

- Tracked counterfeit products or parallel products from various sales channels using NLP techniques including semantic role labeling and named entity recognition
- Devised context extractor based on Jieba tokenizer and Chinese word vectors
- Presented in PCS 2019 medicine CIO summit about NLP approach for tracking counterfeit products

**Math CEO**

*Irvine, USA*

*Mentor*

*Fall 2018 - Spring 2020*

- Coordinated meetings with Santa Ana middle school students and taught mathematical thinking