

Sia, Xin Yun Suzanna

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RESEARCH INTERESTS

Inductive Biases in Transformer self-attention models for in-context learning and Machine Translation
Previously worked on Multimodal Fusion, Topic Modeling, Multilingual IR, Deep Latent Variable Modeling, Non-parametric Grammar Induction, Argument Mining, Chatbots, Sentiment Analysis

EDUCATION

PhD Computer Science (NLP), Johns Hopkins University 2018-

- Primary Advisor: Kevin Duh

M.Tech Knowledge Engineering, National University of Singapore Jan 2014 – Dec 2016

- Awarded Honors (Distinction)
- Thesis: An Expert System for Energy Efficient Resource Management. Advisor: Zhu Fangming

BSc. A.I & Psychology, University of Edinburgh Sep 2009 – Jul 2013

- Full Scholarship from Singapore government
- Awarded First Class Honors
- Best Undergrad CS Thesis, Video Meeting Search Interfaces. Advisor: Steve Renals

AWARDS

SCHOLARSHIPS

Best Poster, [NYAS Speech and Dialogue Symposium](#), (1/60) 2019

PhD Scholarship, DSO National Labs (declined for JHU RAsip) 2018

2nd Place, NUS/NUHS-MIT Datathon 2018

3rd Place, 26th Association for Computing Machinery CIKM Analyticup 2017

Kinetic Award, GPA, GPA, DSO National Labs 2016, 2017, 2018

JASSO Scholarship, Japan Government 2016, 2017

Best Poster, British Computing Society Lovelace Colloquium 2013

PUBLICATIONS

Sia, S., Duh, K., [Prefix Embeddings for In-context Machine Translation](#). *Conference of the Association for Machine Translation in the Americas* 2022

Sia, S., Belyy, A., Khabisa, M., Amjad, A., Zettlemoyer, L., Mathias, L., [On the Logical Satisfiability of Counterfactuals for Evaluating Faithful Explanations in NLI Tasks](#). 2022

Dalmia, A. Sia, S. [Clustering with UMAP: Why and How Connectivity matters](#). *Workshop on Graphs and more Complex structures for Learning and Reasoning @AAAI 2022* 2022

Sia, S., Niyatti, Kevin Duh, Kokil Jaidka. [Persuasion through dissonance: Using modeling constraints to identify winning arguments in multi-party interactions](#). *Under Review*

Sia, S., Duh, K. [Adaptive Mixture LDA for Low-resource Topic Modeling](#) *Proceedings of the 2021 Conference European Association of Computational Linguistics*. 2021

Sia, S., Dalmia, A., Mielke, S., [Tired of Topic Models? Clusters of Pretrained Word Embeddings Make for Fast and Good Topics too!](#) *Proceedings of the 2020 Conference on Empirical Methods in Natural Language Processing*. 2020

Sun, S., Sia, S., Duh, K., [CLIREval: Evaluating Machine Translation as a Cross-Lingual Information Retrieval Task](#) *Proceedings of the 58th Annual Meeting of the Association for Computational Linguistics: System Demonstrations* 2020

Xie, J., Sia, S., Garcia, P., Povey, D., Khundanpur, S. [Mixture of Speaker-type PLDAs for Children's Speech Diarization](#) *arXiv:2008.13213* 2020

Sia, S., Jaidka, K., Duh, K., [A semi-supervised hierarchical generative model of argumentation](#). *Natural Language, Dialog and Speech Symposium, New York Academy of Sciences*. 2019

Sia, S., Li L.J.A., [Hierarchical Module Classification in Mixed Initiative Conversational Agent System](#), *Proceedings of the 24th ACM International on Conference on Information and Knowledge Management. ACM*, 553–562. 12 2017

TEACHING	Teaching Assistant NLP(Reviews), DL, ML, Intro Human Language Technology	2019
	Student Mentor , Shibaura Institute of Technology, Saitama, Japan, [Report] [Program]	2016
WORK EXPERIENCE	Research Intern , Facebook AI Applied Research	Jun 2020/1 – Oct 2020/1
	<ul style="list-style-type: none"> ▪ Multimodal Explainability for Logical Inference ▪ Multimodal Hatespeech detection, multimodal indexing and retrieval. ▪ Made several code contributions to Facebook’s open source Multimodal Fusion Library 	
	Research Engineer , DSO National Laboratories, Singapore	Jun 2015 – Aug 2018
	<ul style="list-style-type: none"> ▪ Defence related NLP projects: Information Retrieval, conversational agents, recommender systems and social computing. Advisor: Chieu Hai Leong 	
	Research Assistant , Singapore Management University	Aug 2016 – Dec 2016
	<ul style="list-style-type: none"> ▪ Clustered user sub-groups via collaborative filtering and Variational Inference for Probabilistic Matrix Factorization. Advisor: Jiang Jing 	
PROJECTS	Psychologist , DSO National Laboratories, Singapore	Jul 2013 – Jun 2015
	<ul style="list-style-type: none"> ▪ Conducted experiments to evaluate various cognitive and social sensing systems including wearable technology, Microsoft Kinect, and cognitive test batteries. Human factors and usability studies. 	
	Visiting Researcher , Stanford University	Mar 2012 – Jul 2012
	<ul style="list-style-type: none"> ▪ Designed metric and implemented the algorithm for automatically scoring a sequence of decisions in an online choice based task. Advisor: Dan Schwartz 	
	Infinite PCFGs for social grammars	2019
SKILLS/TOOLS	<ul style="list-style-type: none"> ▪ Hierarchical Dirichlet Process for learning non-parametric grammars. Grammars are evaluated on sentiment classification using easy-first parsing tree LSTMs. [Interim write-up] 	
	Patient Conversation Simulator	2017
	<ul style="list-style-type: none"> ▪ Simulated patient conversation for medical education, demonstrated system with explainable response selection at the 26th ACM Conference of International Knowledge Management. 	
	Undergraduate Admissions QA System , National University of Singapore	2017
	<ul style="list-style-type: none"> ▪ Programmed a live chat system for the Undergraduate Computing admissions cycle. Deployed on NUS School of Computing Website and Facebook page. [Twitter] 	
GRADUATE COURSEWORK	Computational Propaganda Project	Feb 2016 – May 2016
	<ul style="list-style-type: none"> ▪ Developed anomaly detection algorithms for Taiwan case study in the Computational Propaganda Project by Oxford Internet Institute. [Guardian-article] 	
	<u>Programming:</u> Python, Java, Cython, bash, Octave/Matlab, R, HTML5/Javascript/CSS, Haskell <u>Research:</u> Git, Scikit-learn, SciPy, NumPy, Pandas, Gensim, Stanford NLP, wordnet/nltk, pymc3, NetworkX, Thulac, Protege, DBPedia, SPARQL, Mallet (Java), EJML (Java), L ^A T _E X <u>Deep Learning Frameworks:</u> Tensorflow, PyTorch, AllenNLP, Keras <u>Web:</u> Amazon Web Services, Heroku, NodeJS, ExpressJS, Flask, Scrapy, Selenium, Django <u>Databases:</u> MongoDB, PostgreSQL, ElasticSearch, Neo4j <u>Psychology:</u> Amazon Turk, experimental design, participant recruitment, interface design	
	Natural Language Processing, Advanced Bayesian Statistics (Non-parametrics), Linguistic and Sequence Modelling, Distributed Systems, Introduction to Statistics, Information Theory, Randomized Algorithms, Object-Oriented Architecture and Design	
ADDITIONAL COURSES / CERTIFICATIONS	Deep Learning Specialization (16 weeks), Coursera/DeepLearning.AI, [Cert]	2018
	Machine Learning Specialization (25 weeks), Coursera/University of Washington [Cert]	2017
	Machine Learning Summer School, Max Planck Institute of Intelligent Systems, Germany	2017
	ITIL Foundation in IT Service Management, AXELOS, UK, [Cert]	2015