

Sia, Xin Yun Suzanna

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RESEARCH AREAS	2 years of Social Computing, 8 years of NLP/ML experience. Previously worked on Multimodal Fusion, Clustering, Topic Modeling, Compression, VAEs, Bayesian Inference; with applications in Hate speech, Info Retrieval, Argument Mining, Natural Language Inference, Explanation Faithfulness, Chatbots and Machine Translation.	
EDUCATION	PhD Computer Science (NLP) , Johns Hopkins University ▪ Primary Advisor: Kevin Duh ▪ Thesis: In-context Learning for Machine Translation M.Tech Knowledge Engineering , National University of Singapore ▪ Awarded Honors Distinction, completed part-time while working full-time at DSO Labs ▪ Thesis: An Expert System for Energy Efficient Resource Management. Advisor: Zhu Fangming BSc. A.I & Psychology , University of Edinburgh ▪ Full Scholarship from Singapore government ▪ Awarded First Class Honors ▪ Best Undergrad CS Thesis (1/200+), Video Meeting Search Interfaces. Advisor: Steve Renals	2018 - October 2023 Jan 2014 – Dec 2016 Sep 2009 – Jul 2013
AWARDS / SCHOLARSHIPS	Best Poster , NYAS Speech and Dialogue Symposium , (1/60) PhD Scholarship , DSO National Labs (declined for JHU RAship) 2nd Place , NUS/NUHS-MIT Datathon 3rd Place , 26th Association for Computing Machinery CIKM Analyticup JASSO Scholarship , Japan Government	2019 2018 2018 2017 2016, 2017
WORK EXPERIENCE	PhD Research Intern, Facebook AI Applied Research (2 Summers) ▪ Multimodal Explainability for Logical Inference ▪ Multimodal Hatespeech detection, multimodal indexing and retrieval. ▪ Made several code contributions to Facebook’s open source Multimodal Fusion Library. [Commits] Senior Member of Technical Staff, DSO National Laboratories, Singapore ▪ Research engineer and mentor for junior staff and interns in NLP projects: Information Retrieval, conversational agents, recommender systems and social computing. Advisor: Chieu Hai Leong Research Assistant, Singapore Management University ▪ Clustered user sub-groups via collaborative filtering and Variational Inference for Probabilistic Matrix Factorization. Advisor: Jiang Jing Consultant, Ministry of Defence, Singapore ▪ Provided technical recommendations in Strategic Policy paper on Fake News Detection ▪ Workflow Analysis and technology recommendations for Intelligence Analysts ▪ Review team decision-making processes for Chemical-Toxin-Radiological-Nuclear Safety Council. Psychologist, DSO National Laboratories, Singapore ▪ Conducted experiments to evaluate various cognitive and social sensing systems including wearable technology, Microsoft Kinect, and cognitive test batteries. Human factors and usability studies.	Jun 2020/1 – Oct 2020/1 Jun 2015 – Aug 2018 Aug 2016 – Dec 2016 2015 – 2016 Jul 2013 – Jun 2015
CONSULTING	AI Centre for Educational Technologies , Large Language Models for interactive teaching Nesta , UK’s Innovation Agency for social good. Topic Models for unsupervised text mining	2023 2020

OTHER PROJECTS	<p>Infinite PCFGs for social grammars 2019</p> <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] <p>Palm Oil Sustainability Application 2018</p> <ul style="list-style-type: none"> ▪ Prototyped finance and productivity platform that provides additional income to palm oil smallholders and supports verification of sustainable farming practices for Unilever, Bayer, EastVentures and GrowAsia. [Report] <p>Undergraduate Admissions QA System, National University of Singapore 2017</p> <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] <p>Computational Propaganda Detection Feb 2016 – May 2016</p> <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]
PUBLICATIONS (PEER REVIEWED)	<p>Sia, S., Belyy, A., Khabisa, M., Amjad, A., Zettlemoyer, L., Mathias, L., Logical Satisfiability of Counterfactuals for Evaluating Faithful Explanations in NLI Tasks. <i>AAAI</i> 2023</p> <p>Sia, S., Duh, K., In-context Learning as Maintaining Coherency: A Study of On-the-fly Machine Translation Using Large Language Models. <i>MT Summit</i> 2023</p> <p>Sia, S., Duh, K., Prefix Embeddings for In-context Machine Translation. <i>AMTA</i> 2022</p> <p>Dalmia, A. Sia, S. Clustering with UMAP: Why and How Connectivity matters. <i>Workshop on Graphs and more Complex structures for Learning and Reasoning @AAAI</i> 2022</p> <p>Sia, S.*, Jaidka, K*, Ahuja, H., Chhaya, K., Duh, K. Offer a Different Perspective: Modeling the Belief Alignment of Arguments in Multi-party Debates. <i>EMNLP</i> 2022</p> <p>Sia, S., Duh, K. Adaptive Mixture LDA for Low-resource Topic Modeling <i>EACL</i> 2021</p> <p>Sia, S., Dalmia, A., Mielke, S., Tired of Topic Models? Clusters of Pretrained Word Embeddings Make for Fast and Good Topics too! <i>EMNLP</i> 2020</p> <p>Sun, S., Sia, S., Duh, K., CLIREval: Evaluating Machine Translation as a Cross-Lingual Information Retrieval Task <i>ACL Demo</i> 2020</p> <p>Sia, S., Li L.J.A., Hierarchical Module Classification in Mixed Initiative Conversational Agent System, <i>CIKM Demo</i> 2017</p>
UNDER REVIEW/ARXIV	<p>Sia, S., Mueller, D., Duh, K., Where does In-context Machine Translation Happen in Large Language Models? <i>Under Review</i> 2023</p> <p>Sia, S., Delucia, A., Duh, K., Anti-LM Decoding for Zeroshot In-context Machine Translation <i>Under Review</i> 2023</p>
TEACHING	<p>Teaching Assistant NLP (Reviews), Deep Learning, Machine Learning, Intro to Human Language Technology. Recorded University lecture series on Transformers Self-Attention for JHU Eng for Professionals Msc course. 2019-2021</p>
SKILLS/TOOLS	<p><u>Programming</u>: Python, bash, Java, Cython, R, HTML5/Javascript/CSS</p> <p><u>Libraries</u>: Scikit-learn, SciPy, NumPy, Pandas, HuggingFace, Gensim, Stanford NLP, wordnet/nltk, pymc3, NetworkX, Thulac, Protege, DBpedia, Mallet (Java), EJML (Java)</p> <p><u>Deep Learning Frameworks</u>: PyTorch, Tensorflow AllenNLP, Keras</p> <p><u>Web</u>: Amazon Web Services, Heroku, NodeJS, ExpressJS, Flask, Scrapy, Selenium, Django</p> <p><u>Databases</u>: MongoDB, PostgreSQL, Elasticsearch, Neo4j</p> <p><u>Psychology</u>: Amazon Turk, experimental design participant recruitment, interface design</p>