

# XI(SEAN) CHEN

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## EDUCATION

<b>University of Massachusetts Amherst</b>	<b>Amherst, MA</b>
• PhD in Computer Science (GPA: 3.9/4)	2019-present
<b>Central South University</b>	<b>Changsha, China</b>
• B.E. in Computer Science (GPA: 3.9/4)	2014-2018

## EXPERIENCE

<b>Amazon (AGI foudation)</b>	<b>Seattle, WA</b>
<b>Applied Scientist Intern</b>	2024.7 - 2024.10
<b>(Incorporated into Amazon core LLM with a ICML submission, saliently beat existing methods).</b>	
<ul style="list-style-type: none"><li>• Applied parameter efficient LLM training with Quantized LoRA for scalable model adaptation.</li><li>• Devised a model merging framework by aligning activation to accelerate multi-task LLM learning.</li><li>• Implemented adaptive online learning with sample re-weighting for continuous LLM improvement.</li></ul>	
<b>University of Massachusetts Amherst</b>	<b>Amherst, MA</b>
<b>Research Assistant</b>	2019.9 - present
<ul style="list-style-type: none"><li>• Zero-shot learning on LLM with an event retrieval pipeline from global multilingual news database.</li><li>• Built a transformer-based global news graph with trillions of edges for event detection and recommendation.</li><li>• Developed the largest multilingual news similarity dataset, leveraging active learning for retrieval and ranking.</li><li>• Designed a cluster-aware active learning framework for extracting events from temporal graph of social texts.</li><li>• Applied greedy factor selection and regression to quantify country effects on news similarity.</li></ul>	
<b>University of California, Los Angeles</b>	<b>Los Angeles, CA</b>
<b>Research Intern</b>	2018.7 - 2018.12
<ul style="list-style-type: none"><li>• Modeled the dynamics of opinions and personalities with probabilistic graph time series.</li><li>• Devised an extended EM algorithm for learning the graph time series and get state-of-the-art performance.</li></ul>	
<b>Zhipu AI (Chinese OpenAI)</b>	<b>Beijing, China</b>
<b>Research Intern</b>	2018.3 - 2018.9
<ul style="list-style-type: none"><li>• Searched and rank scholars with heterogeneous random forest (deployed on prestigious AI platform Aminer).</li><li>• Clustered and visualize temporal scientific topics with refined genetic algorithm.</li></ul>	

## PROJECT

<b>Merge LLM with Online Activation Alignment</b>
<ul style="list-style-type: none"><li>• Developed an activation alignment framework to merge LLMs across diverse tasks (math, coding, medical).</li><li>• Adapted activation weight for LLM online learning during parameter-efficient training and sampling.</li></ul>
<b>Global Multilingual News Graph Learning</b>
<ul style="list-style-type: none"><li>• Devised a global news retrieval system, generating trillion-scale relations with dense embeddings and indexing.</li><li>• Built rank models for similar multilingual news using rules-based and active learning classifiers.</li></ul>
<b>LLM Question Answering Generation for Identifying Disasters</b>
<ul style="list-style-type: none"><li>• Engineered zero-shot learning prompts to optimize LLM precision and recall in news event retrieval system.</li><li>• Built regression models to quantify country factors with greedy feature selection and event clustering.</li></ul>
<b>Active learning for temporal events from Social Polls</b>
<ul style="list-style-type: none"><li>• Designed a cluster-aware active learning framework to detect temporal events from Twitter poll texts.</li><li>• Modeled the evolution of social discourse by graph-based topic tracking and statistical analysis.</li></ul>
<b>Personalized Opinion Graph Time Series Learning</b>
<ul style="list-style-type: none"><li>• Model the dynamics of opinions and personalities with probabilistic graph time series.</li><li>• Devise an extended EM algorithm for learning the graph time series and get competitive performance.</li></ul>

## SELECTED PUBLICATION

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### Adaptive Activation Alignment for Merging Large Language Models

**Xi Chen**, Yue Zhang, Akshaya Shanbhogue. Submitted to International Conference on Machine Learning (**ICML**), 2025.

### International News Synchrony and Diversity during the Start of Covid-19

**Xi Chen**, Scott Hale, David Jurgens, Mattia Samory, Ethan Zuckerman, Przemyslaw Grabowicz. International World Wide Web Conference (**The Webconf**), 2024.

### Detecting Global Disaster Event with Question Answering on Large Language Model

**Xi Chen\***, Erica Cai\*, Brendan O’connor, Przemyslaw Grabowicz. Submitted to International AAAI Conference on Web and Social Media (**ICWSM**), 2024.

### Cluster-aware Active learning for Event Identification from Social Polls

**Xi Chen**, Mayank Bumb, Vishal Kalakonnar, Przemyslaw Grabowicz. To appeal, 2024.

### A Multilingual Similarity Dataset for News Article Frame

**Xi Chen**, Scott Hale, David Jurgens, Mattia Samory, Przemyslaw Grabowicz. International AAAI Conference on Web and Social Media (**ICWSM**), 2023.

### Multilingual Document-level Similarity

**Xi Chen**, Ali Zeynali, Chico Camargo, Fabian Flock, Devin Gaffney, Przemyslaw Grabowicz, Scott Hale, David Jurgens, Mattia Samory. International Workshop on Semantic Evaluation (**@NAACL**), 2022.

### Modeling Personalized Dynamics of Social Network and Opinion at Individual Level

**Xi Chen**, Jie Tang, Yizhou Sun. Preprint on Arxiv, 2019.

## SKILL

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### Core Expertise:

Large language model: RLHF, Parameter-efficient fine-tuning, Model merging, Retrieval-augmented generation(RAG).  
Search & Retrieval: News similarity search, Transformer-based retrieval models, Semantic indexing.  
Recommendation Systems: Graph modeling, Active learning for ranking, Multilingual content recommendations.  
Machine Learning & Optimization: Event detection, Time-series analysis, Probabilistic modeling.

### Tools & Frameworks:

Deep Learning: PyTorch, TensorFlow, Hugging Face Transformers.  
Big Data & Search: Spark, Elasticsearch, FAISS, SQL.  
Programming: Python, C++, R, Java, Linux.

## SERVICE

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### Program Member:

- NAACL(2023)
- ICWSM(2023, 2024)
- SEMEVAL (2022, 2023, 2024)
- IC2S2 (2022, 2023, 2024)

## HONOR

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NSF Student Travel Award, 2024

UMass CICS best portfolio finalist, 2023.

Research presented at top-tier computer science venues (Webconf, NAACL, ICWSM, TADA, IC2S2).

Nomination for Chinese Exceptional Student (1/6500 ISchool undergrads and grads), 2018.

Ranked global Top50 of Autochess players (50/millions, a world-class strategy game).