

# Yoshinari Fujinuma

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Virtual

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## Professional Experience

**Member of Technical Staff**, Cantina Labs, USA Dec 2024 - Jan 2025

- LLM Training: Ran full-parameter SFT and LoRA direct preference optimization (DPO) of mixture-of-experts (MoE) LLMs on Kubernetes clusters and achieved  $\sim 8\times$  faster multi-node training by unlocking Elastic Fabric Adapter, Infiniband.
- LLM Inference: Implemented, evaluated, and delivered custom sampling techniques on an internal vLLM fork to encourage creativity of LLM outputs.

**Applied Scientist / Senior Applied Scientist**, Amazon.com, Inc., USA Sep 2021 - Dec. 2024

- [AWS Bedrock Knowledge Base](#): Evaluated and developed extending Bedrock Knowledge Base (RAG on Bedrock) to be multimodal.
- [AWS Bedrock Titan](#): Data curation and supervised fine-tuning for building an LLM from scratch using the AWS Elastic Kubernetes Service (EKS) cluster.
- [AWS Comprehend Document AI](#): Trained a model for extracting information on document images. Made the inference time  $\sim 3\times$  faster using [FasterTransformers](#).

**Graduate Part-Time Instructor**, Univ. of Colorado Boulder, USA Jan-May 2021

- CSCI 4622 Machine Learning ([Github Repo](#))

**Teaching Assistant**, Univ. of Colorado Boulder, USA Jan-Dec 2020, May-Jul 2021

**Applied Scientist Intern**, Amazon.com, Inc., USA May-Aug 2018, May-Aug 2020

**Research Assistant**, Univ. of Colorado Boulder, USA Aug 2016 - Dec 2019

**Software Dev Engineer**, Amazon Japan K.K., Japan Oct 2014 - Aug 2016

- Built a JA/ZH language detector for search queries with recall  $> 0.8$ .
- Built a semi-supervised CRF-based Japanese query label tagger with  $F1 = 0.91$ .

**Software Engineer Intern**, Amazon Japan K.K., Japan Nov 2013 - Feb 2014

**Part-time Engineer**, Atilika, Japan Aug-Nov 2013, Apr-Sep 2014

## Education

University of Colorado Boulder, USA Dec 2021

Ph.D. in Computer Science

Advisors: Katharina Kann, Jordan Boyd-Graber, Michael J. Paul

University of Tokyo, Japan Sep 2014

M.S. in Computer Science; Advisor: Akiko Aizawa

International Christian University, Japan Mar 2012

B.A. in Computer Science and Mathematics; Advisor: Grant Poghosyan

## Publications

- Benjamin Hsu, Xiaoyu Liu, Huayang Li, [Yoshinari Fujinuma](#), Maria Nadejde, Xing Niu, Ron Litman, Yair Kittenplon, Raghavendra Pappagari: “[M<sup>3</sup>T: A New Benchmark Dataset for Multi-Modal Document-Level Machine Translation](#)”, NAACL 2024

- Yoshinari Fujinuma\*, Siddharth Varia\*, Nishant Sankaran, Srikar Appalaraju, Bonan Min, Yogarshi Vyas: “[A Multi-Modal Multilingual Benchmark for Document Image Classification](#)”, EMNLP Findings 2023
- Sharon Levy, Neha Anna John, Ling Liu, Yogarshi Vyas, Jie Ma, Yoshinari Fujinuma, Miguel Ballesteros, Vittorio Castelli, and Dan Roth: “[Comparing Biases and the Impact of Multilingual Training across Multiple Languages](#)”, EMNLP 2023
- Pietro Lesci, Yoshinari Fujinuma, Momchil Hardalov, Chao Shang, Lluís Marquez: “[Diable: Efficient Dialogue State Tracking as Operations on Tables](#)”, ACL Findings 2023
- Yoshinari Fujinuma, Jordan Boyd-Graber, Katharina Kann: “[Match the Script, Adapt if Multilingual: Analyzing the Effect of Multilingual Pretraining on Cross-lingual Transferability](#)”, ACL 2022
- Yoshinari Fujinuma, Masato Hagiwara: “[Semi-Supervised Joint Estimation of Word and Document Readability](#)”, TextGraphs-15@NAACL 2021
- Mozhi Zhang\*, Yoshinari Fujinuma\*, Michael J. Paul, Jordan Boyd-Graber: “[Why Overfitting Isn’t Always Bad: Retrofitting Cross-Lingual Word Embeddings to Dictionaries](#)”, ACL 2020
- Mozhi Zhang, Yoshinari Fujinuma, Jordan Boyd-Graber: “[Exploiting Cross-Lingual Subword Similarities in Low-Resource Document Classification](#)”, AAAI 2020
- Yoshinari Fujinuma, Jordan Boyd-Graber, Michael J. Paul: “[A Resource-Free Evaluation Metric for Cross-Lingual Word Embeddings based on Graph Modularity](#)”, ACL 2019
- Dasha Pruss, Yoshinari Fujinuma, Ashlynn R. Daughton, Michael J. Paul, Brad Arnot, Danielle Albers Szafir, Jordan Boyd-Graber: “[Zika discourse in the Americas: A multilingual topic analysis of Twitter](#)”, PLOS ONE 2019
- Yoshinari Fujinuma, Alvin Grissom II: “[Substring Frequency Features for Segmentation of Japanese Katakana Words with Unlabeled Corpora](#)”, IJCNLP 2017
- Yoshinari Fujinuma, Hikaru Yokono, Pascual Martínez-Gómez, Akiko Aizawa: “[Distant-supervised Language Model for Detecting Emotional Upsurge on Twitter](#)”, PACLIC 2015

\*denotes equal contribution

<b>OSS Projects</b>	<b>Finite State Transducer (FST) for Kuromoji</b> 2015 <ul style="list-style-type: none"> <li>• Replaced a double-array trie to an FST for Kuromoji, a java-based Japanese tokenizer used in Lucene, Solr, and Elastic Search. (<a href="#">Github Repo</a>)</li> </ul>
<b>Academic Service</b>	Area Chair: <ul style="list-style-type: none"> <li>• 2023 ACL (Multilingualism &amp; Cross-lingual NLP track)</li> <li>• 2023 EMNLP (Multilingualism &amp; Linguistic Diversity Track)</li> <li>• 2023 LREC-COLING (Information/Knowledge Extraction, and Text Mining Track)</li> </ul> Program Committee/Reviewer: <ul style="list-style-type: none"> <li>• 2025 AAAI, ACL Rolling Review, COLM, LREC</li> <li>• 2024 AAAI, ACL Rolling Review, COLM</li> <li>• 2023 AAAI, ACL Rolling Review, EACL, NAACL, W-NUT, NLP4HR</li> <li>• 2022 AAAI, ACL Rolling Review, ACL, EMNLP, NAACL SRW, W-NUT, CoNLL</li> <li>• 2021 NAACL, ACL, EMNLP, ACL Rolling Review, CoNLL, NAACL SRW, ACL SRW, W-NUT, AmericasNLP Workshop</li> <li>• 2019 Workshop on Noisy User-Generated Text (W-NUT)</li> </ul> Secondary Reviewer: 2019 ACL, 2017 EMNLP, 2017 WWW

<b>Academic Honors</b>	• Outstanding Reviewer for CoNLL	2021
	• Departmental Travel Grant from CU Boulder (300 USD)	2017
	• Graduate School Travel Grant from CU Boulder (500 USD)	2017
	• Dean's Fellowship from CU Boulder (1/2 of the yearly tuition and stipend)	2016
	• Graduate School Travel Grant from Univ. of Tokyo (80,000 JPY)	2013
	• Gödel Foundation Prize: Best Bachelor thesis in CS and Math (50,000 JPY)	2012
	• Horie Takematsu and Koh Scholarship (2,000 USD)	2010
	• Student Scholarship from ICU (1/3 of the yearly tuition)	2008-2012
<b>Computer and Language Skills</b>	<u>Languages</u>	Proficient: Python; Intermediate: C++, Java
	<u>Libraries</u>	vLLM, PyTorch, Megatron, Deepspeed, Git, Vim