

# Xinyan Velocity Yu

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Home: [velocitycavalry.github.io](https://velocitycavalry.github.io)

## Education

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† *Indicates expected*

- 2023–2028 † Ph.D., Computer Science, University of Southern California  
2025 † M.S., Computer Science, University of Southern California  
GPA: 4.0, Supervisor: Dani Yogatama  
2021–2023 M.S., Computer Science, University of Washington  
GPA: 4.0, Supervisors: Hannaneh Hajishirzi, Luke Zettlemoyer  
2017–2021 B.S., Computer Science & Applied and Computational Mathematics, University of Washington  
GPA: 3.91, with Departmental Honor and Cum Laude

## Past Employment

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- 07/2022–07/2023 Part-time AI Resident, **Meta AI (Facebook AI Research)**  
Host: Asli Celikyilmaz, Mike Lewis  
12/2021–06/2022 Research assistant, **University of Washington**  
Supervisors: Sewon Min, Hannaneh Hajishirzi, Luke Zettlemoyer  
08/2021–11/2021 Software Engineering Intern, Facebook Ads Ranking, **Facebook**  
Implement a versioning system for counter-based features in Facebook Ads to reduce the bias in internal experimentation using C++ and Python. Implement and test different multi-armed bandits selection strategies for ads options in C++.  
05/2021–08/2021 Software Engineering Intern, Search Features, **Pinterest**  
Implement topic-based user search using Java, Python, Bazel and Apache Hadoop for profile's tab based on query intent detection for Pinterest's profile search to showcase individual creators in key verticals, increases creators profile views by 11%: [Related press release](#)  
04/2021–06/2021 Undergraduate research assistant, **University of Washington**  
Supervisors: Akari Asai, Jungo Kasai, Hannaneh Hajishirzi  
06/2020–09/2020 Software Engineering Intern, Azure Networking, **Microsoft**  
Implement a pipeline using C++ and Python that runs in production nightly for every data center for efficient anomalies detection in running router configurations for Azure Networking.

## Honors and Awards

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2024	Outstanding Reviewer (EMNLP 2024)
2023–2024	Viterbi Graduate Fellowship, University of Southern California
2022	Selected Scholar, The Cornell, Maryland, Max Planck Pre-doctoral Research School
2021	Computer Science Departmental Honor, University of Washington
2021	Infospace Endowed Scholarship, University of Washington
2019	Grace Hopper Celebration Scholarship, University of Washington
2017–2021	Annual Dean’s List, University of Washington

## Publications

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Google Scholar: <https://scholar.google.com/citations?user=PoZv5KkAAAAJ>

Semantic Scholar: <https://www.semanticscholar.org/author/Xinyan-Velocity-Yu/2118211280>

\* denotes equal contributions

## Conference Papers

- [1] Li Du, Afra Amini, Lucas Torroba Hennigen, **Xinyan Velocity Yu**, Jason Eisner, Holden Lee, Ryan Cotterell. “Principled Gradient-Based MCMC for Conditional Sampling of Text.” In: *International Conference on Machine Learning (ICML)*. 2024. [\[paper\]](#)
- [2] Akari Asai, Sneha Kudugunta, **Xinyan Velocity Yu**, Terra Blevins, Hila Gonen, Machel Reid, Yulia Tsvetkov, Sebastian Ruder, Hannaneh Hajishirzi. “BUFFET: Benchmarking Large Language Models for Few-shot Cross-lingual Transfer.” In: *North American Chapter of the Association for Computational Linguistics (NAACL) (Oral Presentation)*. 2024. [\[paper\]](#)
- [3] Ting-Rui Chiang, **Xinyan Velocity Yu**, Joshua Robinson, Ollie Liu, Isabelle Lee, Dani Yogatama. “On Retrieval Augmentation and the Limitations of Language Model Training” In: *North American Chapter of the Association for Computational Linguistics (NAACL)*. 2024. [\[paper\]](#)
- [4] Jungo Kasai, Keisuke Sakaguchi, Yoichi Takahashi, Ronan Le Bras, Akari Asai, **Xinyan Yu**, Dragomir Radev, Noah A. Smith, Yejin Choi, Kentaro Inui. “RealTime QA: What’s the Answer Right Now?” In: *Neural Information Processing Systems (NeurIPS) Datasets and Benchmarks Track*. 2023. [\[paper\]](#)
- [5] **Xinyan Velocity Yu**, Sewon Min, Luke Zettlemoyer, Hannaneh Hajishirzi. “Crepe: Open-Domain Question Answering with False Presuppositions.” In: *Annual Meeting of the Association for Computational Linguistics (ACL) (Oral Presentation)*. 2023. [\[paper\]](#)
- [6] Swarnadeep Saha, **Xinyan Velocity Yu**, Mohit Bansal, Ramakanth Pasunuru, Asli Celikyilmaz. “MURMUR: Modular Multi-Step Reasoning for Semi-Structured Data-to-Text Generation.” In: *Findings of Annual Meeting of the Association for Computational Linguistics (ACL)*. 2023. [\[paper\]](#)
- [7] **Xinyan Velocity Yu\***, Akari Asai\*, Trina Chatterjee, Junjie Hu, Eunsol Choi. “Beyond Counting Datasets: A Survey of Multilingual Dataset Construction and Necessary Resources.” In: *Findings of Empirical Methods in Natural Language Processing (EMNLP)*. 2022. [\[paper\]](#)

- [8] Akari Asai, **Xinyan Yu**, Jungo Kasai, Hannaneh Hajishirzi. “One Question Answering Model for Many Languages with Cross-lingual Dense Passage Retrieval.” In: *Neural Information Processing Systems (NeurIPS)*. 2021. [\[paper\]](#)

## Preprints

- [P1] Zhaofeng Wu, **Xinyan Velocity Yu**, Dani Yogatama, Jiasen Lu, Yoon Kim. “The Semantic Hub Hypothesis: Language Models Share Semantic Representations Across Languages and Modalities.” *arXiv Preprint*. 2024. [\[paper\]](#)  
**Submitted to ICLR 2025.**
- [P2] Ting-Rui Chiang, Joshua Robinson, **Xinyan Velocity Yu**, Dani Yogatama. “LocateBench: Evaluating the Locating Ability of Vision Language Models.” *arXiv Preprint*. 2024. [\[paper\]](#)  
**Submitted to NAACL 2025.**
- [P3] Zora Zhiruo Wang\*, Akari Asai\*, **Xinyan Velocity Yu**, Frank F. Xu, Yiqing Xie, Graham Neubig, Daniel Fried. “CodeRAG-Bench: Can Retrieval Augment Code Generation?” *arXiv Preprint*. 2024. [\[paper\]](#)  
**Submitted to NAACL 2025.**

## Professional Services

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### Reviewer / Program Committee

Conferences:

- ICLR (2024, 2025)
- ACL Rolling Review (2023, 2024)
- NeurIPS (2023)
- EACL (2023)
- AKBC (2022)
- CoNLL (secondary, 2022)

Workshops:

- ML Reproducibility Challenge (2023)
- Multilingual Representation Learning Workshop at EMNLP (2023)
- Multilingual Information Access Workshop at NAACL (2022)

### Departmental Services

- 2019–2020    UW ACM: Treasurer: Prepare budget, tax and legal documents  
2018–2019    UW ACM: Associate Officer: Research nights and events outreach

## Open-source Contributions

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- [Anserini](#), [Pyserini](#) Implement feature of indexing using Apache Lucene and retrieving multilingual user documents using BM25 in Java and Python.  
Integrate Apache Lucene analyzers in Anserini for 15 languages using Java and Apache Maven (Related PR: [Anserini#1548](#))  
Enable the corresponding python wrapper in Pyserini using Python and Pyjnius (Related PR: [Pyserini#591](#))
- [VisualSketchpad](#) Increase the robustness of multi-agent systems during prompt feeding, path reading (Related commit: [#7f311f1](#), [#d504794](#), [#d4b6a86](#))

## Teaching Assistantships

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Fall 2024	CSCI 567: Advanced Machine Learning Instructor: Dani Yogatama	University of Southern California
Spring 2023	CSE 444: Database Systems Internal Instructor: Ryan Mass	University of Washington
Winter 2023	CSE 447: Natural Language Processing Instructor: Sofia Serrano	University of Washington
Spring 2022	CSE 415: Artificial Intelligence (non-major) Instructor: Megan Hazen	University of Washington
Winter 2022	CSE 447: Natural Language Processing Instructor: Noah Smith	University of Washington
Spring 2021	CSE 473: Artificial Intelligence Instructor: Hannaneh Hajishirzi	University of Washington
Winter 2021	CSE 473: Artificial Intelligence Instructor: Eric Hsu	University of Washington
Fall 2020	CSE 333: Systems Programming Instructor: Hal Perkins	University of Washington
Spring 2020	CSE 333: Systems Programming Instructor: Hal Perkins	University of Washington
Winter 2020	CSE 332: Data Structures and Parallelisms Instructor: Kevin Lin	University of Washington
Fall 2019	CSE 373: Data Structures and Algorithms Instructor: Kevin Lin	University of Washington
Summer 2019	CSE 373: Data Structures and Algorithms Instructor: Robbie Weber	University of Washington
Spring 2019	CSE 373: Data Structures and Algorithms Instructor: Kasey Champion	University of Washington

## Selected Coursework

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ML Related	Learning Theory, Machine Learning, Deep Learning, Natural Language Processing, Artificial Intelligence
Math / Stats	Stochastic Processes, Discrete Math Modeling, Continuous Math Modeling, Probabilities I & II
General CS	Operating Systems, Systems Programming, Hardware/Software Interface Programming, Programming Languages, Functional Programming, Advanced Algorithms, Advanced Database, Database Management

## Skills

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Programming Languages	Python, Java, C, C++, C#, Julia, Scala, Rust, SQL, SQL++, NoSQL, MATLAB, R, Swift, SML, Racket, Ruby, Javascript, Bash
Frameworks	Pytorch, Tensorflow, Apache Hadoop, Spark, Azure, GCP, React, Vue