

Nick McKenna

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Summary

- **PhD in NLP.**
- Seeking an AI / ML Science position.
- 6 publications in NLP, including the *Best Paper Award* at AACL 2023.
- Ex-Applied Science at Amazon Alexa.
Ex-Product Manager.
- **Research Experience:**
Commonsense reasoning, question answering, Knowledge Graphs, Generative LLMs and factual hallucination.

Education

THE UNIVERSITY OF EDINBURGH

Ph.D. Informatics 2023
Institute for Language, Cognition, and Computation
Thesis: *Inference of Natural Language
Predicates in the Open Domain*
Advisor: Mark Steedman

M.Sc. Artificial Intelligence, *Distinction* 2019

BROWN UNIVERSITY

B.Sc. Computer Science 2017

Professional Experience

Applied Scientist II Intern, Amazon, Alexa AI *Cambridge, UK* Jun – Oct 2022

- Researched a neuro-symbolic model for answering questions which is fully differentiable and explainable. The model leverages a Language Model and Differentiable Knowledge Graph to answer natural user questions using KG facts, which may be updated without model retraining.
- Published in ACL 2023: SustaiNLP workshop as *KGQA Without Retraining*. ↪ [Paper Link](#)

Product Manager, TapToBook (Startup) *Miami, USA* 2017 – 2018

- Identified business needs, researched and designed solutions, and prioritized the product roadmap for the 10-person development team (spanning web, iOS, and Android).
- Transformed the core business model with innovative technologies and user experiences to find product-market fit, with focus on scalable AI solutions.
- Scaled the platform to national brands including Planet Fitness, leading to profitability.

Product Management Intern, Yelp *San Francisco, USA* Jun – Aug 2016

- Grew engagement by 13% on business review highlights by surfacing user-relevant information.

Engineering Intern, Yelp *San Francisco, USA* May – Aug 2015

- Developed a new tool for restaurant hosts to create guest reservations, reducing time spent on this task by 88% (for *Yelp Reservations* on iPad, an OpenTable competitor).

Skills

- **Modeling:** Machine Learning for automated decision-making; extracting structured knowledge from text; answering user questions; generative modeling of tasks using large models, etc.
- **Languages:** Python, Java, Swift/iOS, C, SQL+Splunk
- **Tools:** PyTorch, Huggingface Transformers, LLMs like LLaMA & GPT-4, AWS, Git, Numpy, Scipy

Publications

Conference Papers

- EMNLP Findings* 2023 **Nick McKenna*** and Tianyi Li*; Liang Cheng, Mohammad Javad Hosseini, Mark Johnson, and Mark Steedman. *Sources of Hallucination by Large Language Models on Inference Tasks.*
 ↪ [Paper Link](#)
- AACL* 2023 **Nick McKenna**, Tianyi Li, Mark Johnson, and Mark Steedman. *Smoothing Entailment Graphs with Language Models.* *Best Paper Award*
 ↪ [Paper Link](#)
- EMNLP* 2021 **Nick McKenna**, Liane Guillou, Mohammad Javad Hosseini, Sander Bijl de Vroe, Mark Johnson, and Mark Steedman. *Multivalent Entailment Graphs for Question Answering.*
 ↪ [Paper Link](#)
- **SEM* 2020 **Nick McKenna** and Mark Steedman. *Learning Negation Scope from Syntactic Structure.*
 ↪ [Paper Link](#)

Workshop Papers

- SustainNLP* 2023 **Nick McKenna** and Priyanka Sen. *KGQA Without Retraining.* Workshop at ACL.
 ↪ [Paper Link](#)
- CASE* 2021 Sander Bijl de Vroe* and Liane Guillou*; Miloš Stanojević, **Nick McKenna**, and Mark Steedman. *Modality and Negation in Event Extraction.* Workshop at ACL.
 ↪ [Paper Link](#)

Teaching

Graduate TA at the University of Edinburgh

Accelerated Natural Language Processing (M.Sc. course) 2019 – 2021
 Natural Language Understanding and Machine Translation (M.Sc. course) 2020 – 2022

Undergraduate TA at Brown University

Computational Linguistics 2017
 Computer Graphics 2016
 Computer Architecture 2015

Talk Panelist

“Starting in NLP Research” at NAACL 2021

Conference Reviewing

ACL 2023
 EACL 2023
 EMNLP 2021, 2023
 COLING 2020
 STARSEM 2020, 2021

Scientific Service

Large Software Projects

- **2048: Two to Infinity (iOS)**: 16,000 downloads; ranked top 100 strategy games in USA and Canada.
- **Movie Review Summarizer (Python, PyTorch)**: Hierarchical sentiment analysis model usable for extractive summarization of reviews by selecting the most sentimental sentences.
- **StingRay Renderer (OpenGL, C++)**: Real-time GPU raytracing of 3D scenes using shader caching.

Awards & Honors

Best Paper Award at AACL 2023: *Smoothing Entailment Graphs with Language Models* 2023
 Huawei Ph.D. Scholarship Award 2019
 Outstanding M.Sc. Dissertation: *Learning Negation Scope Semantics with Structure* ↪ [Link](#) 2019