

# Nick McKenna

Informatics Forum, Office 5.19  
10 Crichton Street  
Edinburgh, EH8 9AB

Email ↪ [nick.mckenna@ed.ac.uk](mailto:nick.mckenna@ed.ac.uk)  
Homepage ↪ [www.nmckenna.me](http://www.nmckenna.me)  
GitHub ↪ [www.github.com/nighttime](https://www.github.com/nighttime)

## Summary

- **PhD in NLP.**
- Seeking an AI / ML Scientist position.
- Ex-Applied Science at Amazon Alexa.  
Ex-Product Manager.
- 6 publications in NLP.  
5 years of experience in ML + NLP.
- **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*. In Preparation. [↪ Preprint Link](#)
- AACL* 2023 **Nick McKenna**, Tianyi Li, Mark Johnson, and Mark Steedman. *Smoothing Entailment Graphs with Language Models*. In Preparation. **Nominated for Best Paper Award.** [↪ Preprint 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

Huawei Ph.D. Scholarship Award 2019  
 Outstanding M.Sc. Dissertation: *Learning Negation Scope Semantics with Structure* [↪ Link](#) 2019