NICK McKENNA

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github.com/nighttime

CURRENTLY: *Doctoral student in Informatics researching techniques in Natural Language Processing. Interests include entailment, causality, event structure, and representation learning.*

EDUCATION

THE UNIVERSITY *of* EDINBURGH

Ph.D. Informatics *Est 2023*
Advised by Professor Mark Steedman
Institute for Language, Cognition, and Computation

M.Sc. Artificial Intelligence *2019*
Awarded with Distinction

BROWN UNIVERSITY

B.Sc. Computer Science *2017*
Special Focus in Machine Learning

SELECTED COURSEWORK

- *Accelerated Natural Language Processing*
- *Natural Language Understanding & Translation*
- *Machine Learning*
- *Deep Learning*
- *Formal Semantics and Pragmatics*

SKILLS

- Design of practical computer models for automatic language understanding leveraging syntax, semantics, and pragmatics.
- Skilled with ML frameworks: PyTorch, TensorFlow, and Keras; Proficient in Python, Java, C++, Swift/iOS.
- Data analysis with SQL & Python numerical libraries.

IMPACT

Teaching Assistant, Edinburgh *2019 – Present*
Hands-on with 300+ students across three graduate computing courses. Actively lead discussion groups and technical labs, grade work, and hold office hours regularly.

Teaching Assistant, Brown *2015 – 2017*
Hands-on with students in undergrad computing courses. Designed curriculum, graded work, and held office hours.

Sponsorship, Hack@Brown *2015 – 2017*
Raised $45,000 for Brown's annual hackathon from partners Google, Microsoft, TwoSigma, and others.

RESEARCH EXPERIENCE

Research in Natural Language Processing
Advised by Professor Mark Steedman *Oct 2018 - Present*

- Active research into the semantics of open-domain natural language predicates via the construction of a predicate Entailment Graph.
  - > Currently exploring entailment between predicates of different valencies and metarelationships between predicates of events and states.
- **Outstanding Master's dissertation in NLP:**
  Learning Negation Scope Semantics with Structure [Link]

Brown Computational Cognitive Science Reading Group
Led by Professor Ellie Pavlick *Summer 2018*

Critiqued current research in language processing and models of concept learning.

PROFESSIONAL EXPERIENCE

TAPTOBOOK *Product Manager* *June 2017 – Aug 2018*
- Directed the product development roadmap for the TapToBook platform. Identified business needs, researched solutions, and prioritized work for the 10-person development team.
- Overhauled the core business model based on product and business data, focusing on AI-driven solutions to maximize customer benefit. TapToBook is now profitable and growing rapidly.

YELP *Product Management Intern* *Summer 2016*
- Experimented with ML team, growing review highlights engagement by 13%. Conducted extensive data analysis in SQL for product planning.

YELP *Engineering Intern* *Summer 2015*
- Built tool for Yelp Reservations iPad, reducing users' time spent by 88%.

PAST PROJECTS

Document Summarizer, Python & TensorFlow
Algorithm for extractive summarization using a deep convolutional neural network to identify the most sentimental sentences, based on Google DeepMind paper.

High-Frequency Trading Agent, Java
Securities trading algorithm. Net-positive outcome, 2nd best in the competition.

StingRay Renderer, OpenGL & C++
Real-time GPU raytracer that renders interactive 3D scenes using on-device caching.

Two to Infinity, iOS *16,000 Downloads*
Mobile game based on 2048. Ranked Top 100 Strategy Games in US and Canada.