

Kevin Lybarger

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Summary

Pursuing a PhD in Electrical Engineering. Researching medical applications of natural language processing (NLP) and machine learning that improve clinical documentation processes, patient modeling, and health outcomes. Seeking opportunities to apply NLP and machine learning to real-world problems.

Research

- 2017-present | **Extracting information from clinical notes**
University of Washington, Seattle, WA
- Extracting social behavioral information from clinical notes using NLP
 - Exploring multi-task, active, and semi-supervised learning approaches
 - Implementing a range of neural modeling techniques using Google's TensorFlow
- 2015-2018 | **Improving clinical documentation processes**
University of Washington, Seattle, WA
- Investigated the creation of clinical notes using automatic speech recognition
 - Augmented the functionality of a commercial speech recognition system
 - Detected word sequences in clinical notes that may negatively affect accuracy

Teaching

- 2012-present | **Adjunct Faculty**
Seattle University, Seattle, WA
- Teaching Electrical Engineering courses to a diverse student population
 - Advising students in year-long, industry-sponsored senior capstone projects
- 2014-present | **Teacher Assistant**
University of Washington, Seattle, WA
- Teaching laboratory courses, including courses for student-exchange programs
 - Recognized for proctoring a highly rated course by the College of Engineering
- 2015-2018 | **Research Assistant: Vertically Integrated Projects (VIP)**
University of Washington, Seattle, WA
- Developed an undergraduate-focused, project-based learning program
 - Recruited students and faculty, emphasizing diversity and inclusivity

Engineering

- 2007-2012 | **Senior Engineer**
DNV KEMA, Seattle, WA
- Developed and performed wind turbine prototype tests
 - Conducted root cause analyses of wind turbine failures
- 2006-2007 | **Graduate Researcher**
National Renewable Energy Laboratory, Golden, CO
- Designed a GPS-synchronized data acquisition system for wind turbines

Education

2014-present	Pursuing PhD in Electrical Engineering University of Washington, Seattle, WA <ul style="list-style-type: none">• Focus: Machine learning and natural language processing• Supervisors: Dr. Mari Ostendorf and Dr. Eve Riskin• GPA: 3.82
2005-2007	Master of Science in Electrical Engineering University of Colorado, Boulder, CO <ul style="list-style-type: none">• Focus: Power electronics and renewable energy systems• GPA: 3.94
1999-2003	Bachelor of Science in Electrical Engineering Seattle University, Seattle, WA <ul style="list-style-type: none">• GPA: 3.96

Publications

1. K. Lybarger, M. Yetisgen, and M. Ostendorf, “Using neural multi-task learning to extract substance abuse information from clinical notes,” in *AMIA Annu Symp Proc*, 2018
2. K. Lybarger, M. Ostendorf, E. Riskin, T. Payne, A. White, *et al.*, “Asynchronous speech recognition affects physician editing of notes,” *Appl Clin Inform*, vol. 9, no. 4, pp. 782–790, 2018
3. T. Payne, W. Alonso, J. Markiel, K. Lybarger, R. Lordon, *et al.*, “Using voice to create inpatient progress notes: effects on note timeliness, quality, and physician satisfaction,” *J Am Med Inform Assoc Open*, 2018
4. K. Lybarger, M. Ostendorf, and M. Yetisgen, “Automatically detecting likely edits in clinical notes created using automatic speech recognition,” in *AMIA Annu Symp Proc*, pp. 1186–1195, 2017
5. T. Payne, A. Markiel, W. Alonso, R. Lordon, K. Lybarger, *et al.*, “Improving electronic inpatient progress notes using voice: results from the VGEENS project,” in *AMIA Annu Symp Proc*, 2017
6. T. Payne, W. Alonso, A. Markiel, K. Lybarger, and A. White, “Using voice to create hospital progress notes: description of a mobile application and supporting system integrated with a commercial electronic health record,” *J Bioinform*, vol. 77, pp. 91–96, 2017

Service

2005-2007	Project Manager Engineers Without Borders, Boulder, CO <ul style="list-style-type: none">• Led the design and installation of a photovoltaic water pumping system• Brought potable water to a community of over 100 people in Peru• Recognized by Rotary International for Professional & Humanitarian Services
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Awards

2017	Husky 100 Recipient <ul style="list-style-type: none">• Recognized for leadership, discovery mindset, and commitment to inclusivity
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Licenses

2010	State of Washington Professional Engineer (PE)
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