Adam N. Goodkind

CONTACT INFORMATION	Northwestern University Department of Communication Studies 2240 Campus Drive, Evanston, IL 60208 USA	a.goodkind@u.northwestern.edu adamgoodkind.com

RESEARCH
STATEMENT

I study social interactions through the lens of keystroke timing, using HCI theories in combination with linguistic analysis. My thesis is titled *Using keystrokes to predict social dynamics in online dialogue*. It identifies how we can use timing differences in keystrokes to recover many of the same social cues we usually detect in signals such as tone-of-voice or pauses, but are lost in text-based digital communication. The thesis brings together HCI, Cognitive Science, NLP and statistical modeling. I have a passion for applying findings from HCI to creating more useful tools for users, alongside creating engaging visualizations to improve understanding.

EDUCATION

PhD, Northwestern University

Media, Technology & Society Program   2019–Present
PI: Darren Gergle (CollabLab)
Dissertation: Using keystrokes to predict social dynamics in online dialogue
Linguistics Department   2016–2019
PI: Klinton Bicknell (Language & Computation Lab)
Honors:
Data Science Fellowship
Cognitive Science Specialist

M.A., CUNY Graduate Center   2016
Computational Linguistics
M.A. Thesis: Utilizing Linguistic Context To Improve Identification in Typed Text
Thesis Advisors: Prof. Andrew Rosenberg and Prof. Martin Chodorow

B.A., Columbia University   2007
Religion (Study of Science & Religion)

RESEARCH
EXPERIENCE

Research Assistant, CollabLab, Evanston, IL, USA   **2019–Present**
PI: Darren Gergle
- Running a crowd-sourced experiment for my dissertation utilizing keystroke-level analysis to understand social and cognitive differences in production timing and linguistic choices, depending on the social perceptions of a partner in a collaborative task.
- Supervise a Research Assistant tasked with creating a code base and setting up a database.
- Analyze patterns of conversational turn-taking, depending on the social function of an utterance as well as linguistic aspects of the utterances.

Research Assistant, LangComp Lab, Evanston, IL, USA   **2017–2019**
PI: Klinton Bicknell
- Researched how linguistic predictability, measured with neural language models, affects sentence processing via eye-tracking.
- Investigated autism diagnoses using linguistic markers, using semantic similarity (word vectors) and pragmatic deficiencies.

Research Assistant, CUNY Speech Lab, New York, NY, USA   **2012–2016**
PI: Andrew Rosenberg
- Managed DARPA-funded initiative to improve security and personal authentication in computer use, by predicting keystroke and language patterns with machine learning algorithms.

Research Assistant, Columbia NLP Group, New York, NY, USA   **2006–2007**
PI: Rebecca Passonneau

Non-Academic Employment	**PhD Data Science Intern,** Vail Systems, Chicago, IL, USA **Summer 2020**

PhD Data Science Intern, Vail Systems, Chicago, IL, USA   **Summer 2020**
- Created experiments to empirically evaluate the quality of text-to-speech (TTS) systems

Software Developer in Test Intern, Microsoft, Redmond, WA, USA   **Summer 2013**
- Developed website (back- and front-end) to diagnose licensing issues with Microsoft products
- Developed decision-making pipeline to aid in issue diagnosis

Operations Analyst, Goldman Sachs, Multiple Locations, USA   **2008–2011**
- Team Leader for Technology Enhancements
- Created software to streamline daily asset delivery workflow, from 3 hours to 25 minutes

Languages

Computer: Java, Python, R (ggplot2, plotly, lme4), C++, C#, LaTeX, Beginner in {HTML, JavaScript, React, CSS}
Human: American Sign Language (ASL), Hebrew, Latin

Honors and Awards

Incubation Prize, Hack4Rare Hackathon (Recursion Pharmaceuticals & CTF)   **2021**
Best Paper Award, Cognitive Modeling & Computational Linguistics (CMCL)   **2018**
Data Science Fellowship, Northwestern University   **2016–2017**
Google Lime Connect Scholarship-Finalist   **2014**
Thomas W. Smith Academic Fellowship, CUNY Graduate Center   **2013–2014**
National Science Foundation, Undergraduate Research Grant, Columbia University **2007**
King's Crown Award for Outstanding Leadership, Columbia University   **2006**

Select Publications

2021   **Goodkind, A.** TypeShift: A User Interface for Visualizing the Typing Production Process. [arXiv paper]

Goodkind, A., Bicknell, K. Local word statistics affect reading times independently of surprisal. [arXiv paper]

2020   **Goodkind, A.** An analytic model for human subjective judgements of computer-generated synthetic voice (TTS) quality. Technical Report for Vail Systems. Chicago, IL.

2018   **Goodkind, A.**, Lee, M., Martin, G. E., Losh, M., & Bicknell, K. Detecting language impairments in autism: A computational analysis of semi-structured conversations with vector semantics. In *Proceedings of the Inaugural Meeting of the Society for Computation in Linguistics.* Salt Lake City, UT: Linguistic Society of America. [paper] [slides]

Goodkind, A. & Bicknell, K. Predictive power of word surprisal for reading times is a linear function of language model quality. In *Proceedings of the 8th Workshop on Cognitive Modeling and Computational Linguistics (CMCL 2018).* Salt Lake City, UT: Linguistic Society of America. [paper] [slides]

2016   **Goodkind, A.**, Brizan D.G. & Rosenberg, A. *Utilizing Overt and Latent Linguistic Structure to Improve Keystroke-Based Authentication.* Image and Vision Computing: Best of Biometrics Special Issue.

2015   **Goodkind, A.** & Rosenberg, A. *Muddying The Multiword Expression Waters: How Cognitive Demand Affects Multiword Expression Production. 11th Workshop on Multiword Expressions at NAACL-HLT 2015.* (Slides)

Brizan, D. G.*, **Goodkind, A.***, Koch, P., Balagani, K., Phoha, V. V., & Rosenberg, A. *Utilizing Linguistically-Enhanced Keystroke Dynamics to Predict Typist Cognition and Demographics. International Journal of Human-Computer Studies, October 2015, vol. 84, 57-68.*

2008   **Goodkind, A.** *Tracking the Emergence of Narrative Competence in Story Retelling. Quebec Student Journal of Linguistics, Vol. 3.*

2007   Passonneau, R. J., **Goodkind, A.**, & Levy, E. T. *Annotation of Children's Oral Narrations: Modeling Emergent Narrative Skills for Computational Applications. Florida Artificial Intelligence Research Society (FLAIRS), 253-258.*

TEACHING
EXPERIENCE

Teaching Assistant

Northwestern University
- Communication Studies 351: Technology & Human Interaction (Prof. Darren Gergle), 2021
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- Linguistics 220: Language & Society (Prof. Annette D'Onofrio), 2018
    - Guest lecture on quantitative data analysis
- Cognitive Science 210: Language & the Brain (Profs. Matt Goldrick & Mark Beeman), 2019