



Johannes C. Eichstaedt

Assistant Professor (Research) of Psychology

 Curriculum Vitae available Online

Bio

BIO

I am a computational social scientist in psychology, an Assistant Professor in Psychology, and a Shriram Faculty Fellow at the Institute for Human-Centered Artificial Intelligence. I direct the Computational Psychology and Well-Being lab. In 2011, I co-founded what is now a consortium of labs that combines NLP with psychology, AI, and public health, the World Well-Being Project (wwbp.org). I received my Ph.D. and did a postdoc at the University of Pennsylvania.

I use Facebook and Twitter to measure the psychological states of large populations and individuals, to determine the thoughts, emotions, and behaviors that drive illness, depression, or support well-being. A.I.-based methods allow us to better understand these psychological phenomena, as well as to measure their expression unobtrusively and at scale for large populations.

This is especially relevant for the measurement of subjective well-being for populations around the world—in places where no traditional measures are available with sufficient spatial and temporal resolution to measure the impact of economic or social disruptions, or to inform public policy.

Real-time measurement of population mental health is becoming particularly critical in the aftermath of COVID-19, and to track the impact of disruptive events like the murder of George Floyd.

A key emphasis of this computational work is to use these data and algorithms for good, to benefit well-being and health.

ACADEMIC APPOINTMENTS

- Assistant Professor (Research), Psychology
- Member, Bio-X
- Member, Wu Tsai Human Performance Alliance

ADMINISTRATIVE APPOINTMENTS

- Member, Open Science Committee, Psychology, (2020- present)

HONORS AND AWARDS

- Rising Star, Association for Psychological Science (2022)
- Early Career Researcher Award, International Positive Psychology Association (2021)
- Emerging Leader in Science & Society, American Association for the Advancement of Science (AAAS) (2014)

PROGRAM AFFILIATIONS

- Symbolic Systems Program

PROFESSIONAL EDUCATION

- Ph.D., University of Pennsylvania , Psychology (2017)
- M.A., University of Pennsylvania , Psychology (2013)
- MAPP, University of Pennsylvania , Positive Psychology (2011)
- M.S., University of Chicago , Particle Physics (2010)
- B.S. (Hons.), King's College, London , Physics & Philosophy (2009)

LINKS

- lab website: <https://cpwb.stanford.edu/>
- personal website: <https://jeichstaedt.com/>
- Google scholar: <https://scholar.google.com/citations?user=-mNEhD0AAAAAJ&hl=en&inst=5746887945952177237&oi=ao>
- OSF Repositories: <https://osf.io/f5d2x>

Research & Scholarship

CURRENT RESEARCH AND SCHOLARLY INTERESTS

I use large-scale language analyses and machine learning to characterize disease risk, measure subjective well-being and mental health of populations, and enrich and test psychological theory. I focus on applications of these methods that inform public health and public policy, and to create health systems that are more responsive to mental illness.

Teaching

COURSES

2022-23

- Natural Language Processing in the Social Sciences: PSYCH 290 (Win)

2021-22

- Natural Language Processing & Text-Based Machine Learning in the Social Sciences: PSYCH 290, SOC 281, SYMSYS 195T (Aut)

2020-21

- Natural Language Processing & Text-Based Machine Learning in the Social Sciences: PSYCH 290, SYMSYS 195T (Aut)

Publications

PUBLICATIONS

- **Depression and anxiety on Twitter during the COVID-19 stay-at-home period in seven major US cities.** *AJPM focus*
Levanti, D., Monastero, R. N., Zamani, M., Eichstaedt, J. C., Giorgi, S., Schwartz, H. A., Meliker, J. R.
2022: 100062
- **Incivility Is Rising Among American Politicians on Twitter** *SOCIAL PSYCHOLOGICAL AND PERSONALITY SCIENCE*
Frimer, J. A., Aujla, H., Feinberg, M., Skitka, L. J., Aquino, K., Eichstaedt, J. C., Willer, R.
2022
- **The relationship between text message sentiment and self-reported depression.** *Journal of affective disorders*
Liu, T., Meyerhoff, J., Eichstaedt, J. C., Karr, C. J., Kaiser, S. M., Kording, K. P., Mohr, D. C., Ungar, L. H.

1800

- **Nonprofits: A Public Policy Tool for the Promotion of Community Subjective Well-being.** *Journal of public administration research and theory : J-PART*
Ressler, R. W., Paxton, P., Velasco, K., Pivnick, L., Weiss, I., Eichstaedt, J. C.
2021; 31 (4): 822-838
- **The emotional and mental health impact of the murder of George Floyd on the US population** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Eichstaedt, J. C., Sherman, G. T., Giorgi, S., Roberts, S. O., Reynolds, M. E., Ungar, L. H., Guntuku, S.
2021; 118 (39)
- **The emotional and mental health impact of the murder of George Floyd on the US population.** *Proceedings of the National Academy of Sciences of the United States of America*
Eichstaedt, J. C., Sherman, G. T., Giorgi, S., Roberts, S. O., Reynolds, M. E., Ungar, L. H., Guntuku, S. C.
2021; 118 (39)
- **Regional personality assessment through social media language.** *Journal of personality*
Giorgi, S., Nguyen, K. L., Eichstaedt, J. C., Kern, M. L., Yaden, D. B., Kosinski, M., Seligman, M. E., Ungar, L. H., Andrew Schwartz, H., Park, G.
2021
- **Closed- and open-vocabulary approaches to text analysis: A review, quantitative comparison, and recommendations.** *Psychological methods*
Eichstaedt, J. C., Kern, M. L., Yaden, D. B., Schwartz, H. A., Giorgi, S., Park, G., Hagan, C. A., Tobolsky, V. A., Smith, L. K., Buffone, A., Iwry, J., Seligman, M. E., Ungar, et al
2021; 26 (4): 398-427
- **World Trade Center responders in their own words: predicting PTSD symptom trajectories with AI-based language analyses of interviews.** *Psychological medicine*
Son, Y., Clouston, S. A., Kotov, R., Eichstaedt, J. C., Bromet, E. J., Luft, B. J., Schwartz, H. A.
2021: 1-9
- **Information-seeking vs. sharing: Which explains regional health? An analysis of Google Search and Twitter trends** *TELEMATICS AND INFORMATICS*
Jaidka, K., Eichstaedt, J., Giorgi, S., Schwartz, H., Ungar, L. H.
2021; 59
- **Beyond Beliefs: Multidimensional Aspects of Religion and Spirituality in Language** *PSYCHOLOGY OF RELIGION AND SPIRITUALITY*
Yaden, D. B., Giorgi, S., Kern, M. L., Adler, A., Ungar, L. H., Seligman, M. P., Eichstaedt, J. C.
2021
- **Understanding Weekly COVID-19 Concerns through Dynamic Content-Specific LDA Topic Modeling.** *Proceedings of the Conference on Empirical Methods in Natural Language Processing. Conference on Empirical Methods in Natural Language Processing*
Zamani, M., Schwartz, H. A., Eichstaedt, J., Guntuku, S. C., Ganesan, A. V., Clouston, S., Giorgi, S.
2020; 2020: 193-198
- **(Un)happiness and voting in U.S. presidential elections.** *Journal of personality and social psychology*
Ward, G., De Neve, J., Ungar, L. H., Eichstaedt, J. C.
2020
- **Tracking Fluctuations in Psychological States Using Social Media Language: A Case Study of Weekly Emotion** *EUROPEAN JOURNAL OF PERSONALITY*
Eichstaedt, J. C., Weidman, A. C.
2020
- **The language of character strengths: Predicting morally valued traits on social media.** *Journal of personality*
Pang, D., Eichstaedt, J. C., Buffone, A., Slaff, B., Ruch, W., Ungar, L. H.
2020; 88 (2): 287-306
- **Cultural Differences in Tweeting about Drinking Across the US.** *International journal of environmental research and public health*
Giorgi, S., Yaden, D. B., Eichstaedt, J. C., Ashford, R. D., Buffone, A. E., Schwartz, H. A., Ungar, L. H., Curtis, B.
2020; 17 (4)
- **Estimating geographic subjective well-being from Twitter: A comparison of dictionary and data-driven language methods.** *Proceedings of the National Academy of Sciences of the United States of America*

Jaidka, K. n., Giorgi, S. n., Schwartz, H. A., Kern, M. L., Ungar, L. H., Eichstaedt, J. C.
2020

- **The Internet and Participation Inequality: A Multilevel Examination of 108 Countries** *INTERNATIONAL JOURNAL OF COMMUNICATION*
Ahmed, S., Cho, J., Jaidka, K., Eichstaedt, J. C., Ungar, L. H.
2020; 14: 1542–63
- **Evaluating the predictability of medical conditions from social media posts** *PLOS ONE*
Merchant, R. M., Asch, D. A., Crutchley, P., Ungar, L. H., Guntuku, S. C., Eichstaedt, J. C., Hill, S., Padrez, K., Smith, R. J., Schwartz, H.
2019; 14 (6): e0215476
- **Real-world unexpected outcomes predict city-level mood states and risk-taking behavior** *PLOS ONE*
Otto, A., Eichstaedt, J. C.
2018; 13 (11): e0206923
- **Facebook language predicts depression in medical records** *PROCEEDINGS OF THE NATIONAL ACADEMY OF SCIENCES OF THE UNITED STATES OF AMERICA*
Eichstaedt, J. C., Smith, R. J., Merchant, R. M., Ungar, L. H., Crutchley, P., Preotiuc-Pietro, D., Asch, D. A., Schwartz, H.
2018; 115 (44): 11203–8
- **The Future of Technology in Positive Psychology: Methodological Advances in the Science of Well-Being.** *Frontiers in psychology*
Yaden, D. B., Eichstaedt, J. C., Medaglia, J. D.
2018; 9: 962
- **The Language of Religious Affiliation: Social, Emotional, and Cognitive Differences** *SOCIAL PSYCHOLOGICAL AND PERSONALITY SCIENCE*
Yaden, D. B., Eichstaedt, J. C., Kern, M. L., Smith, L. K., Buffone, A., Stillwell, D. J., Kosinski, M., Ungar, L. H., Seligman, M. P., Schwartz, H.
2018; 9 (4): 444–52
- **Detecting depression and mental illness on social media: an integrative review** *CURRENT OPINION IN BEHAVIORAL SCIENCES*
Guntuku, S., Yaden, D. B., Kern, M. L., Ungar, L. H., Eichstaedt, J. C.
2017; 18: 43–49
- **Of Roots and Fruits: A Comparison of Psychedelic and Nonpsychedelic Mystical Experiences** *JOURNAL OF HUMANISTIC PSYCHOLOGY*
Yaden, D. B., Le Nguyen, K. D., Kern, M. L., Belser, A. B., Eichstaedt, J. C., Iwry, J., Smith, M. E., Wintering, N. A., Hood, R. W., Newberg, A. B.
2017; 57 (4): 338–53
- **Living in the Past, Present, and Future: Measuring Temporal Orientation With Language** *JOURNAL OF PERSONALITY*
Park, G., Schwartz, H. A., Sap, M., Kern, M. L., Weingarten, E., Eichstaedt, J. C., Berger, J., Stillwell, D. J., Kosinski, M., Ungar, L. H., Seligman, M. E.
2017; 85 (2): 270-280
- **Gaining insights from social media language: Methodologies and challenges.** *Psychological methods*
Kern, M. L., Park, G., Eichstaedt, J. C., Schwartz, H. A., Sap, M., Smith, L. K., Ungar, L. H.
2016; 21 (4): 507-525
- **The Language of Ineffability: Linguistic Analysis of Mystical Experiences** *PSYCHOLOGY OF RELIGION AND SPIRITUALITY*
Yaden, D. B., Eichstaedt, J. C., Schwartz, H., Kern, M. L., Le Nguyen, K. D., Wintering, N. A., Hood, R. W., Newberg, A. B.
2016; 8 (3): 244–52
- **Women are Warmer but No Less Assertive than Men: Gender and Language on Facebook.** *PloS one*
Park, G., Yaden, D. B., Schwartz, H. A., Kern, M. L., Eichstaedt, J. C., Kosinski, M., Stillwell, D., Ungar, L. H., Seligman, M. E.
2016; 11 (5): e0155885
- **PREDICTING INDIVIDUAL WELL-BEING THROUGH THE LANGUAGE OF SOCIAL MEDIA.** *Pacific Symposium on Biocomputing. Pacific Symposium on Biocomputing*
Schwartz, H. A., Sap, M., Kern, M. L., Eichstaedt, J. C., Kapelner, A., Agrawal, M., Blanco, E., Dziurzynski, L., Park, G., Stillwell, D., Kosinski, M., Seligman, M. E., Ungar, et al
2016; 21: 516-27
- **Living in the Past, Present, and Future: Measuring Temporal Orientation With Language.** *Journal of personality*
Park, G., Schwartz, H. A., Sap, M., Kern, M. L., Weingarten, E., Eichstaedt, J. C., Berger, J., Stillwell, D. J., Kosinski, M., Ungar, L. H., Seligman, M. E.
2015

- **The Mechanics of Human Achievement.** *Social and personality psychology compass*
Duckworth, A. L., Eichstaedt, J. C., Ungar, L. H.
2015; 9 (7): 359-369
- **Automatic personality assessment through social media language.** *Journal of personality and social psychology*
Park, G., Schwartz, H. A., Eichstaedt, J. C., Kern, M. L., Kosinski, M., Stillwell, D. J., Ungar, L. H., Seligman, M. E.
2015; 108 (6): 934-52
- **Psychological language on Twitter predicts county-level heart disease mortality.** *Psychological science*
Eichstaedt, J. C., Schwartz, H. A., Kern, M. L., Park, G., Labarthe, D. R., Merchant, R. M., Jha, S., Agrawal, M., Dziurzynski, L. A., Sap, M., Weeg, C., Larson, E. E., Ungar, et al
2015; 26 (2): 159-69
- **The online social self: an open vocabulary approach to personality.** *Assessment*
Kern, M. L., Eichstaedt, J. C., Schwartz, H. A., Dziurzynski, L., Ungar, L. H., Stillwell, D. J., Kosinski, M., Ramones, S. M., Seligman, M. E.
2014; 21 (2): 158-69
- **From "Sooo excited!!!!" to "So proud": using language to study development.** *Developmental psychology*
Kern, M. L., Eichstaedt, J. C., Schwartz, H. A., Park, G., Ungar, L. H., Stillwell, D. J., Kosinski, M., Dziurzynski, L., Seligman, M. E.
2014; 50 (1): 178-88
- **Personality, gender, and age in the language of social media: the open-vocabulary approach.** *PloS one*
Schwartz, H. A., Eichstaedt, J. C., Kern, M. L., Dziurzynski, L., Ramones, S. M., Agrawal, M., Shah, A., Kosinski, M., Stillwell, D., Seligman, M. E., Ungar, L. H.
2013; 8 (9): e73791