MICHAEL W. KEARNEY, PH.D.

NLP/AI SCIENTIST

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PROFESSIONAL SUMMARY

Internationally recognized expert in Data Science, Natural Language, and Artificial Intelligence with over seven years of professional experience, strong theoretical and quantitative backgrounds, and a knack for finding and implementing innovative solutions to complex problems.

PROFESSIONAL EXPERIENCE

A.I. CONSULTANT   *Aware (client)*   *Michael Kearney AI Consulting LLC*   2023

- Provided expertise and guidance related to use and development of generative AI and large language models
- Identified strengths and weaknesses of data sources and dev/prod models and estimated project timelines
- Proposed and drafted plans to implement/monitor human-in-the-loop AI labeling and offer multi-tier API access

SENIOR DATA SCIENTIST   *BI Team & Data Labs*   *Aware*   2021-2023

- Refactored large language models in PyTorch, implemented best practices, and enabled GPUs
- Proposed and built information quality model to supercharge thematic, summarization, and generative AI
- Curated external dataset of half a billion timely, diverse, and heuristically labeled social messages
- Owned, improved, and expanded (to non-English languages) featured NLP models – sentiment & toxic speech
- Converted and parameterized model training workflows from Airflow to Sagemaker Pipelines
- Created internal packaging for data visualization and sampling, aggregating, and uploading to S3
- Automated model performance reports on inputs, parameters, and metrics (precision, recall, f1, accuracy)
- Mentored junior team members and frequently contributed tutorials and other documentation
- Provided public- and client-facing thematic analysis of workplace collaboration messages
- Used SQL and Athena to efficiently query customer data in DynamoDB, Athena, and Redshift
- Frequently worked with datalakes, Apache Arrow columnar format, and unstructured JSON data
- Created labeling rule books, documented edge cases, and trained/worked with third party annotators

ASSISTANT PROFESSOR   *School of Journalism & Informatics Institute*   *University of Missouri*   2017-2021

- Developed and taught courses on social media data, networks, machine learning, research methods, etc.
- Mentored over 50 masters' students and chaired dozens of journalism theses and data science capstones
- Chaired two doctoral dissertations on computational analysis of social media and data visualization
- Created, reviewed, and researched open-source AI bot detection software
- Developed and maintained popular open-source data science tools for working with digital trace data
- Served on various school and university committees related to data, education, and diversity

INSTRUCTOR/CONSULTANT   *Communication & Research Methods Center*   *University of Kansas*   2012-2017

- Provided analysis and guidance on interdisciplinary research projects across university system
- Contributed to project automating personalized analytics for students in a large school district
- Created rtweet, a massively popular and influential R package for collecting and analyzing Twitter data
- Instructor of record for courses on public speaking, research methods, and leadership
- Facilitated working groups on data science and machine learning topics

TOOLS

LANGUAGES	Python **|** R **|** SQL **|** Git **|** Docker **|** Bash **|** JavaScript
SERVICES	AWS[s3,sagemaker,ecr,athena,redshift] **|** REST APIs
DEV-OPS	Azure **|** Jira **|** GitHub **|** Gitlab **|** Confluence **|** Trello
DEEP LEARNING	PyTorch **|** TensorFlow **|** HuggingFace **|** Keras
MACHINE LEARNING	XGBoost **|** FastText **|** scikit-learn **|** tidymodels
NATURAL LANGUAGE	Spacy **|** HuggingFace **|** nltk **|** RegEx **|** scikit-learn
DATA SCIENCE	polars **|** pandas **|** numpy **|** tidyverse **|** data.table
DATA VIZUALIZATION	ggplot2 **|** ggvis **|** plotly **|** matplotlib **|** d3js

SKILLS

THEORY	Communication **|** Media **|** Interpersonal **|** Opinion & Topic Mining
PRACTICE	Human Annotation **|** Heuristic & Algorithmic Labeling **|** Sampling & Bias
ARTIFICIAL INTELLIGENCE	LLMs **|** Transformers **|** RNN/CNN **|** GRU/LSTM **|** MLP
MODELING	Regression **|** Multilevel **|** Panel **|** ANOVA **|** Structural Equation
UNSUPERVISED	Topic Modeling **|** Network Analysis **|** PCA/CFA **|** Similarity
TEAMWORK	Research Team **|** Experienced Multitasker **|** AGILE Project Philosophy
LEADERSHIP	Project Management **|** Team Supervisor **|** Committee Member & Chair

EDUCATION

DOCTOR OF PHILOSOPHY (PH.D.)	*University of Kansas*	Lawrence, KS	**2017**
Communication & Social and Behavioral Sciences Methodology			
MASTER OF ARTS (M.A.)	*University of Kansas*	Lawrence, KS	**2014**
Communication			
BACHELOR OF SCIENCE (B.S.)	*Missouri State University*	Springfield, MO	**2012**
Socio-Political Communication			

PUBLICATIONS (SELECTED)

PEER-REVIEWED ARTICLES

- Comparative approaches to misinformation, Int. J. Commun.. 2021
- Exploring gender differences on Twitter with NLP, J. Lang. Soc. Psychol.. 2021
- Collecting and analyzing Twitter data, J. Open Source Softw.. 2019
- Analyzing change in network polarization. New Media Soc.. 2019
- Two tests of social displacement through social media use, Inf. Commun. Soc.. 2018
- Interpersonal goals and political uses of Facebook, Commun. Res. Rep.. 2017

POPULAR PRESS ARTICLES

- March Madness office talk on par with Vegas odds, PR Newswire. 2023
- Doubts cast over Elon Musk's Twitter bot claims, BBC News. 2022
- Using data science to uncover mystery author of Times' Op-ed, Rynl. Jrnl. Inst.. 2018
- Trusting News project report, Rynl. Jrnl. Inst.. 2017

OPEN SOURCE SOFTWARE

- rtweet: Collecting Twitter data. 1,100,000 downloads / 491 citations
- tweetbotornot2: Detecting Twitter bots. 100,000 downloads / 27 citations
- textfeatures: Extracts features from text. 43,000 downloads /4 citations