

# Joshua T. Abbott

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## Technical Skills

**PROGRAMMING LANGUAGES:** Python | C | C++ | MATLAB | SQL | PHP | HTML | CSS | Bash

**DATA SCIENCE & MACHINE LEARNING:** Pandas | NumPy | Scikit-Learn | Git | Jupyter Notebook | Data Visualization (Matplotlib) | Neural Networks (CNN, RNN, LSTM, Transformers) | NLP (HuggingFace, spaCy, gensim) | Computer Vision (OpenCV, MediaPipe) | Unsupervised Learning (Clustering, PCA) | Bayesian Inference (MCMC)

**INDUSTRY KNOWLEDGE:** Human Behavioral Modeling | Artificial Intelligence (AI) | Experiment Design | Research | Data Analysis | Collaboration (Cross-functional, International, Mentorship) | Language & Linguistics | Project Management

## Education

**Data Scientist Certification - Fellowship Program, The Data Incubator | 2023**

**Ph.D. in Cognitive Science | University of California, Berkeley | 2016**

**M.Phil. in Computer Science | University of Cambridge | 2010**

**B.A. in Computer Science | New College of Florida | 2009**

## Experience

**UNIVERSITY OF CALIFORNIA, BERKELEY**

**Berkeley, California**

**Research Scientist**

**2022 – Present**

- Researched how commonly-used large language models (e.g., BERT, GPT) differ from psychological semantics.
- Analyzed models trained on large text-corpora to pinpoint lack of accuracy in semantic fluency and typicality capture.

**UNIVERSITY OF MELBOURNE**

**Melbourne, Australia**

**Postdoc Fellow in Computational Cognitive Science (*psychology, linguistics, anthropology, AI*)**

**2019 – 2021**

- Developed and led data science research projects investigating semantic variation in word meanings across 200 cultures. Curated datasets from cognitive anthropology and ornithology sources, such as eBird app. Used ML methods for analysis.
- Enhanced ML methods of recommendation and evaluation for books, playlists, and more. Co-led international, collaborative development of Bayesian cognitive models of human generalization and few shot learning.
- Published peer-reviewed paper and GitHub code demonstrating how data science techniques can address common questions across cultures in cognitive anthropology.

**MAX PLANCK INSTITUTE FOR HUMAN DEVELOPMENT**

**Berlin, Germany**

**Postdoc Fellow in Behavioral Economics**

**2017 – 2018**

- Designed and led research projects with graduate students, postdocs, and senior PIs. Investigated effect of topology/shape of semantic-embedding spaces on forecasting models of human judgment and decision making.
- Investigated systemic biases in abstract acceptances for high-profile conference. Utilized NLP methods, such as topic models and semantic embeddings to determine 5 institutions accounted for 70% of accepted abstracts.

**UNIVERSITY OF CALIFORNIA, BERKELEY**

**Berkeley, California**

**Research Scientist in AI / Graduate Student Researcher**

**2010 – 2017**

- Spearheaded 20+ projects on behavioral modeling regarding language usage and categorization. Evaluated effects of different semantic embeddings, including trees, networks, and vector spaces.
- Built ML models to enable more human-esque recommendation and computer vision systems utilizing large-scale psychological experiments and theories.