Micaela V. McCall

DATA SCIENTIST

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TOOLS & SKILLS

Data Science

- Python
- Clojure
- R
- Machine learning
- Statistical modeling
- Feature extraction
- Classification & regression
- Supervised & unsupervised
- Deep learning, neural nets
- Natural language processing
- Predictive analytics
- Data visualization
- MLOps
- MLFlow
- MongoDB
- Azure ML
- PostgreSQL
- Git & Github

Software Engineering

- Agile software development
- Test-driven development
- Refactoring
- Pair programming/mobbing
- Azure DevOps
- Kubernetes
- Docker
- AWS/Azure
- Jira
- Elasticsearch
- ETL

EDUCATION

Georgia Institute of Technology, *MS in Analytics, Computational Data Analytics Track* ***2023-Present***

Emory University, *BS in Neuroscience and Behavioral Biology, BA in Religion* ***2014-2018***

EXPERIENCE

Data Scientist ***07-2022 -***

OneStudyTeam, a member of the Reify Health family ***12-2022***

- Developed and reported on KPIs in Amazon Quicksight for site use and engagement analytics related to the OneStudyTeam platform.
- Implemented analytical projects such as statistical KPI assessment and anomaly detection in Amazon Sagemaker
- Collaborated with internal customer, product, sales, and marketing teams.
- Developed and maintained Python and dbt (SQL) code and automated tests

Data Scientist ***03-2020 -***

ATA, LLC, The Full Stack Data Science Company ***06-2022***

- Implemented the following analytical projects in Python:
  - Data-driven geospatial risk-analysis algorithm using Bayesian statistics
  - Suite of machine learning and statistical anomaly detection algorithms for use in streaming data systems
  - Ensemble of deep learning and classical machine learning for regression problems in logistics
  - Natural Language Processing and use of medical ontologies for text navigation
- Served as both a tech lead and team member in the design and implementation of full-stack data-intensive applications (in Clojure) to put the above data science solutions into production.
- Applied machine learning operations (MLOps) to production systems, including the development, testing, deployment, and management of model services.
- Developed RESTful APIs in Clojure for complex data integration, processing data from public and licensed datasets, storing in relational and document-oriented databases, and preparing for use by company user interfaces.
- Communicated analytical methods and results to technical and non-technical clients and stakeholders.

Research Fellow ***05-2018 -***

National Institutes of Health, National Center for Complementary and Integrative Health ***03-2020***

Bethesda, MD

- Built pipelines in R and Python for analysis of behavioral and physiological data (fMRI, autonomic).
- Managed Electronic Health Records and clinical data.
- Facilitated patient visits and consulted with patients on study procedures.
- Designed data visualizations and prepared manuscripts for publication in peer reviewed journals.
- Collaborated with a diverse research team; prepared written and verbal reports for multidisciplinary audiences.

PROJECTS more at micaelamccall.com

Finding Topic Clusters in Tech News (GitHub) ***01-2020***
NIH Foundation for Advanced Education in the Sciences, Bioinformatics and Data Science *Bethesda, MD*

- Web-scraped 1,500 tech news articles, applied NLP techniques such as lemmatization and vectorization, and trained a KMeans unsupervised algorithm to cluster articles based on content.

Exploring Patient Satisfaction and Readmission in Medically Underserved Areas (GitHub) ***09-2019***
NIH Foundation for Advanced Education in the Sciences, Bioinformatics and Data Science *Bethesda, MD*

- Munged data from multiple API queries, totalling over 2400 rows, and visualized factor relationships using Python.

Using Supervised Learning to Classify Drug Consumption Behavior (GitHub) ***11-2018***
NIH Foundation for Advanced Education in the Sciences, Bioinformatics and Data Science *Bethesda, MD*

- Trained Logistic Regression, random forest, and SVC models on survey data to predict drug use using Python.

PUBLICATIONS

Case, L. K., Liljencrantz, J., **McCall, M. V.**, Bradson, M., Necaise, A., Tubbs, J., ... & Bushnell, M. C. "Pleasant deep pressure: expanding the social touch hypothesis." *Neuroscience* 464 (2021): 3-11.

- Processed and statistically analyzed fMRI data using Python and FSL; prepared visualizations for manuscript.

McCall, M. V., Riva-Posse, P., Garlow, S. J., Mayberg, H. S., & Crowell, A. L. “Analyzing non-verbal behavior throughout recovery in a sample of depressed patients receiving deep brain stimulation”. *Neurology, Psychiatry and Brain Research*, 37 (2020): 33-40.

- Designed project, collected, and analyzed behavioral data in R using Factor Analysis, Analysis of Variance, and Regression.

Case, L. K., Liljencrantz, J., Madian, N., Necaise, A., Tubbs, J., **McCall, M.**, ... & Chesler, A. T. "Innocuous pressure sensation requires A-type afferents but not functional PIEZO2 channels in humans." *Nature communications* 12.1 (2021): 1-10.

Case, L., **McCall, M.**, Bradson, M., Necaise, A., Tubbs, J., Liljencrantz, J., ... & Bushnell, M."Effect of Naloxone on Touch Intensity and Pleasantness." *The Journal of Pain 20.4* (2019): S63-S64.