John W. Miller

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EXPERIENCE

DATA SCIENTIST — *Enrichment and classification for business sales intelligence*

DiscoverOrg | Vancouver, Washington   **Oct 2018 — Jun 2019**

- Collaborated with data engineers, product managers, and executive leadership to develop and implement machine learning and deep learning models for automated data cleaning and enrichment
- Trained an employee count regression model, improving private company estimates by 15%
- Led the company's transition to Amazon SageMaker for model building, training, and deployment
- Communicated analysis results through interactive visualizations, written reports, and presentations
- Introduced data science team to best practices in version control (GitHub) and Python development

MASTERS FELLOW — *Automated diagnostic tools for diseases of the retina*

Garvin Image Lab | University of Iowa   **Aug 2016 — Jun 2018**

- Created novel combinations of shape analysis and modeling techniques for disease classification
- Trained random forest classifiers to determine the cause of optic disc swelling with 86% accuracy

RESEARCH ASSISTANT — *Neuroscience research and experiment design*

Human Spinal Cord Research Lab | University of Iowa   **Sep 2014 — Aug 2016**

- Designed and conducted experiments investigating the therapeutic effects of spinal cord stimulation
- Wrote and maintained Matlab codebase for the research team's analysis and visualization workflow

RESEARCH FELLOW — *Computational neuroscience research program*

Center for the Neural Basis of Cognition | Carnegie Mellon University   **May — Jul 2013**

- Revealed underlying activity patterns in simultaneous recordings of muscle, neurological, and 3D motion capture data using dimensionality reduction (PCA) and statistical modeling techniques

PROJECTS

LYRICS GENIUS — *Python wrapper for downloading lyrics and music metadata from the Genius.com API*

Python | www.github.com/johnwmillr/lyricsgenius   **Spring 2017 — Present**

- Actively maintaining package on GitHub, coordinating open-source collaboration for numerous users
- *Trucks and Beer* music lyrics project awarded "best data-driven stories of 2018" by *The Pudding*

FACE DETECTION — *Implementation of active shape models for detection of faces in color images*

Matlab | www.github.com/johnwmillr/activeshapemodels   **Spring 2017**

- Trained a point distribution model to detect faces in a public dataset of over 3,000 images
- Provided guidance and technical support to students using project on *Mathworks'* code exchange

MUSCLE MUSIC — *Arduino device for translating muscle activity into electronic music*

Arduino | www.instructables.com/id/make-muscle-midi-music   **Winter 2017**

- Designed and built a circuit and program that generated and controlled music via muscle signals
- 2nd Prize (200+ entrants) in the "Sensors Contest 2017" on *Instructables.com*

TECHNICAL SKILLS

- Python, Matlab, C++, SQL, SciPy, NumPy, pandas, scikit-learn, Jupyter, Flask, Matplotlib, seaborn
- Machine learning, image processing, natural language processing, data visualization, data mining
- GitHub, Databricks, AWS (SageMaker, S3, EC2), Docker

EDUCATION

UNIVERSITY OF IOWA — *Master of Science, Electrical and Computer Engineering*   **Aug 2016 — May 2018**

GOSHEN COLLEGE — *Bachelor of Arts, Physics, minor in English*   **Sep 2010 — May 2014**