Andrew M. Maloney

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Education

Iowa State University, *Ames, IA* **Graduation: May 2020**
Major: Mathematics **GPA: 3.54/4.00**
Certificate: Data Science

Technical Skills

- Programming Languages: Python, R, Matlab
- Additional Programming Languages: SQL, Gusek, Octave, C++
- Network Services: Secure Shell
- Interfaces: Google Cloud API, Tensorflow API, Keras Functional API, ArcGIS
- Software: Jmp Statistics, Microsoft Excel
- Mathematics: Linear Algebra, Graph Theory
- Statistics: Classification, Regression, Time-Series Analysis, GeoStatistics, Bayesian Inference
- Broad understanding of data structures and algorithms
- Effective Communicator
- Strong Critical Thinking Skills

Relevant Work Experience

Center for Statistics and Applications in Forensic Evidence, *Ames, Iowa* **May 2019 - Present**
Data Scientist **15 Hours/Week**

- Promoted from summer 2019 intern to undergraduate research assistant.
- Moved from undergraduate research assistant to graduate research assistant.
- Analyzed curated data sets from National Institute of Science and Technology NRBTD with the goal of ensuring that the data used is of the highest possible quality.
- Assisted in the development and testing of automated bullet matching algorithms for firearm examination.
- Experience in writing R Shiny scripts running a smoothing algorithm to identify and remove impressions from scanned bullet profiles on the backend while displaying the results to the user.
- Calculated and extracted features from scanned bullet profiles using the bulletxtrctr R programming package.
- Assisted in debugging and maintaining multiple functions in the bulletxtrctr R programming package.
- Using newly acquired features to refit a random forest model that allows insight on the predicted probability of two bullet profiles being a match.
- Designed a complete data preprocessing pipeline used for the analysis of 3D topographical data. Which includes a matrix cropping function, scripts used for missing value interpolations, and multi dimensional tensor processing scripts used for feeding data into deep learning models.
- Analyzed the multi classification (**7 classes**) performance of 3D convolutional neural networks on 3D topographical data.

Data Science for the Public Good, *Ames, Iowa* **May 2020 - August 2020**

Data Scientist collaborating with the Bill & Melinda Gates Foundation **40 Hours/Week**

- Worked in designing a speech-to-text data processing pipeline used as the backend for applications in Python and R.
- Worked in designing a R shiny data analysis app for Iowa Hotline Outreach services.
- Worked in designing apps that identify, web-scrape, and spatially map publicly available data reflecting formal and informal 'Systems of Care' data for public civilian use.
- Large contribution in creating mass publicly available dataset know as DSPG https://dspg-isu.github.io/DSPG/

Lynco Products, *Milan, Illinois* **May 2018 - August 2018**

Information Technology Specialist **40 Hours/Week**

- Used Excel, NAV, Python to analyze data and complete warehouse related tasks
- Worked in groups/teams that gathered, cleaned, and optimized data on Universal Product codes for warehouse distribution
- Assisted in developing a streamlined process for Universal Product codes

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Iowa State University Project Experience

- Using machine learning models such as: Decision Trees, Random Forests, and Multi-Layer Perceptrons to correctly predict classification response variables for multiple kaggle datasets.
- Applied visualizations showing a comprehensive understanding of the grammar of graphics for statistical modeling
- Analyzed and cleaned big data obtained from California Department of Transportation in order to train combinations of Convolutional Neural Networks, Dense Neural Networks, and LSTM algorithms
- Presented at the 2019 Summer Undergraduate Research Symposium
- Competed in the annual MUDAC data analytics competition