LinkedIn Profile
GitHub Portfolio

Cole Bennett

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EDUCATION

Bachelor of Science in Cognitive Science **August 2023**
The University of Texas at Dallas, Richardson, TX GPA: 3.82

TECHNICAL SKILLS

- **Programming Languages:** Python, Java, MATLAB, R, C++, C
- **Libraries:** Scikit-Learn, Pandas, NumPy, TensorFlow, Keras, Seaborn, Matplotlib
- **Currently Learning:** OpenCV, NLTK, Bash Shell

RELEVANT COURSEWORK

- Data Structures and Algorithm Analysis
- Introduction to Machine Learning
- Artificial Intelligence
- Computational Methods for Data Science
- Computer Vision
- Natural Language Processing
- Systems Programming in UNIX

ACADEMIC PROJECTS

Adaboost Classifier with UCI Heart Disease Dataset – *From-Scratch Supervised Ensemble Model in Python*

- Implemented theory taught in class to construct a working classifier without helper libraries such as SciKit-Learn
- Achieved approximately 80% classification performance given restrictions to tree structure and limits on rounds of boosting
- Developed a variety of debugging functions to ensure program operated as intended during development

Image Classification using Convolutional Neural Networks – *Transfer Learning using TensorFlow*

- Explored a range of transfer learning models to find one performant for differentiating between several types of Formula One cars
- Methodically tuned hyperparameters and experimented with combinations of layers to construct an optimal model while minimizing waste of computing resources
- Identified and cleaned up erroneous files in the data

PCA and SVMs with Slack – *Dimensionality Reduction and Classification on a Limited Dataset in MATLAB*

- Manually implemented both principal component analysis and a gradient-descent based support vector machine with slack
- Investigated the tradeoffs between computing performance and model interpretability via probabilistic sampling of features using PCA as a guide

Game Agent Optimization using A* – *Implementing Various State Tree Search Techniques in Java*

- Developed representations of the possible states and translated rules of a sliding-puzzle game for construction of a tree of possible states
- Wrote methods for depth-first, iterative deepening, and A* search with multiple heuristics in order to maximize efficiency in finding the minimal sequence of moves required to reach the goal state

EXPERIENCE

Undergraduate Research Assistant, Cognitive Informatics and Statistics Lab August 2021-May 2022

- Researched and inquired into novel applications of cognitive diagnostic models (CDMs), statistical learning methods designed to gain a nuanced understanding of student competencies in exams
- Reconstructed and ran CDMs in R to replicate findings in academic literature
- Wrote R scripts to aid in the preprocessing and formatting of collected data

Instructor, WIZE Computing Academy- Coppell, TX May 2017-August 2021

- Introduced children and young adults to programmatic thinking using a wide range of educational programming tools
- Developed curriculum for new courses and trained other instructors in how to teach the content effectively
- Delivered engaging presentations in both in-person and online modalities to improve student engagement

BOH Team Member, The Biscuit Bar- Plano, TX June 2021-May 2022

- Maintained high standards of service across all aspects of kitchen work in a high-volume, fast-paced environment
- Sought insight from tenured members to develop personalized methods to maintain efficiency