Dylan James McDowell

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EDUCATION

BYU-IDAHO
B.S. Applied Mathematics
December 2018 | Advanced GPA: 3.68
Specialized focus in: Probability Theory, Machine Learning, Data Science, and Linear Modeling

BYU-IDAHO
B.S. Financial Economics
December 2018 | Advanced GPA: 3.67
Specialized focus in: Econometrics, Pricing Theory, Business Valuation, Quantitative Macroeconomics

SKILLS

MINORS
- Computer Science: 25 Credits

PROGRAMMING
Proficient
- R • Python • C++
- Bash • SQL • Java • LaTeX

EXTRA CURRICULAR

Mathematics TA: Developed an R tutorial video series for the Mathematics Department to help students and staff learn how to program using the statistical computation language, R.

Computer Science TA: Assisted students in understanding Abstract Data Types, Sorting Algorithms, Class Structuring, Inheritance, and Polymorphism.

Economics Society President: Mentored students interested in Economics by planning guest speakers relevant in the field of Economics.

Investment Society President: Managed the society's $5.2 million endowment fund.

COURSE WORK

UNDERGRADUATE
Object Oriented Programming
Data Structures & Algorithms
Software Design & Development
Machine Learning
Probability & Statistics
Data Visualization
Calculus I, II, III
Discrete Mathematics
Bayesian Statistics
Linear Algebra
Real Analysis

PROFESSIONAL EXPERIENCE

COMPUTATIONAL SCIENCE INTERN | Idaho National Laboratory
Jan 2019 – Present | Idaho Falls, ID
- Completed major DOE milestone over three months early by migrating all validation cases of the Bison framework over to a new documentation system using *Python*, *Lisp*, and *Pandoc*.
- Aided in development of NEML, a structural material library, by implementing xml parsing functionality that decreased dependencies on several large C++ libraries.
- Recreated engineering experiments of post-doctoral students by generating finite element mesh models using Cubit and Paraview.
- Visualized large scale assessment data using R and Python from the output of the nightly runs on the INL's high performance computing system.

DATA SCIENTIST | Research & Business Development Center
April 2018 – December 2018 | Rexburg, ID
- Saved the firm thousands of dollars in labor and validation costs by building a full-stack data entry software that automated statistical & experimental analysis including visualizations using *Shiny*, *R*, *SQL*, and *Javascript*.
- Automated the statistical analysis of 15+ client projects using R to check assumptions and run multi-block ANOVA and Tukey Test on agronomy data.

DATA SCIENCE LAB MANAGER | BYU-Idaho Tutoring Services
September 2017 – December 2018 | Rexburg, ID
- Instructed students using R to complete assignments across many different subjects.
- Taught students how to view analytical problems by encouraging them to utilize the tidyverse methodology of R.

SUMMER ANALYST - PRIVATE EQUITY | Goldman, Sachs & Co.
June 2017 – August 2017 | Salt Lake City, UT
- Generated cash flow analysis, distribution, and fund performance reports.
- Automated several weekly deliverables using Python and Excel VBA.
- Forecast revenues to the alternative investments business using regression analysis.
- Engineered several programs in VBA, R, and Python to assist analyst in large projects.

STATISTICAL ANALYST | BYU-Idaho Statistical Consulting Group
January 2017 – April 2017 | Rexburg, ID
- Modeled student foot traffic and crowd behavior in a geospatial analysis using R.
- Created an interactive user dashboard for all campus businesses using R-Shiny.
- Programmed several scripts in R to retrieve, clean, and visualize data.

RESEARCH EXPERIENCE

Visual Altimeter using Convolutional Neural Nets
Fall 2018 | Brigham Young University - Idaho, Dept. of Mathematics
- Worked with a professor and client to develop a CNN to determine height above the ground using a drone image as input.
- Simulated data using Microsoft's AirSim to gather training data at different heights and then used Python and Keras to train a CNN to classify heights based on input picture with 87% accuracy.

Analyzing Future Success of Gap Year Students
Winter 2017 | Brigham Young University - Idaho, Dept. of Economics
- Assisted professor in post-doctoral research on the future success of students who chose to take a gap year after high school before going to college using a Dynamic-Factor Hidden Markov Model.
- Programmed a web-scraping application in Python that was able to find a list of the top colleges in United States going back to 2002.