Nolan R. Bonnie

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Education

B.S. in Mathematics, with a Specialization in Data Science (GPA: 3.49) **Expected June 2021**
University of California, Irvine

Awards

UCI UROP Fellow (with monetary grant for Ozone Weekend Effect Research)
Deans Honor List
Campuswide Honors Collegium (requires honors thesis)
Selected by UC President Janet Napolitano as **1 of 8 undergraduate students from the UC system** to attend the Lindau Nobel Laureate Meeting (selection based off achievement in research & academics)
Distinguished Anteater award — **1 of 25 undergraduates selected from UCI**

Leadership

UCI Engineering Student Council **Fall 2017 - Spring 2018**
Discussion Leader for *Introduction to Machine Learning* **Winter 2019**

Coursework and Research

Scientific Coursework

- Engineering: Matlab, scientific computing and visualization, data analysis, machine learning.
- Physics: classical physics and kinematics.
- Chemistry: engineering chemistry.
- Math: honors calculus, statistics, logic, linear algebra, abstract algebra, number theory, graph theory, algorithms, real analysis, probability and stochastics, numerical methods, statistical learning, and Bayesian statistics.
- Computer Science: Python, artificial intelligence.
- Logic and Philosophy of Science: gender biases in scientific writing, honors naturalized epistemology.

Quantification of Weekend Effect in Southern California **Spring 2019 - Present**

- First author of a paper quantifying the ozone weekend effect in Southern California.
- Using hourly ozone data from the past 30 years provided by the Environmental Protection Agency.
- Quantification has never been done in California, producing surprising original results.
- Submitted for publication in Atmospheric Environment on 09/05/2020.

Undergraduate Research Study in Data Science and Computing **Winter 2018 - Present**

- Selected by Professor Donald Dabdub to participate in 4 quarters of individual research study.
- Studied various topics related to data science and computation, such as:
  - Scientific computing and scientific visualization
  - Programming in R, a well established statistical software
  - Data analysis, working with big data, machine learning, and neural networks.
- Applied graduate level statistical learning techniques to real world prediction problems, and used the basis of what I learned to start a business and conduct research in atmospheric chemistry.

Undergraduate Research Study in Mathematics Winter 2018, Spring 2019 & 2020, Fall 2020

- Selected by Professor Chris Davis to join math research courses focused on computational sciences.
- Studied advanced computational algorithms focusing on optimization, which benefits my work involving large datasets.
- Developed skills in graph theory by proving theorems in a graduate textbook on discrete mathematics.
- Wrote an academic paper connecting graph theory to data analytics.
- Selected by Professor Shuhao Cao to join a UCI kaggle team that uses advanced AI techniques to solve public challenges.
- Developed skills in neural network libraries Tensor-flow 2.1 and Keras.
- Closely analyzed *Elements of Statistical Learning* in a graduate reading group led by Professor Knut Solna (only undergrad student invited).

Relevant Work Experience

Sandia National Laboratories — Cybersecurity R&D Intern June 2018 - September 2018

- Managed a 7 person team working on a high-priority research project.
- Project was a groundbreaking proof of concept, and changed the way government servers are protected.
- Created testing data for a new cybersecurity project that used AI to prevent cyber attacks.

Prophet Predictive Modeling — Chief Quantitative Analyst June 2019 - June 2020

- Cofounded a financial predictions company, using AI to forecast the US Stock Market.
- Manage the acquisition and processing of model training data.
- Implement various proven and proprietary quantitative indicators.
- Train our model with advanced statistical learning methods.
- Backtest the model to optimize accuracy and consistency.
- Implement AI models on live stock data.

Learning and Academic Resource Center — Tutorial Leader September 2018 - June 2020

- Lead three supplementary course sections, with classes up to 16 students every quarter.
- Supported a Matlab programming course for engineers.
- Implemented proven supplemental instruction methods to help students learn and retain information.
- **96.3% student satisfaction** from evaluations.

Sandia National Laboratories — Cybersecurity R&D Year-Round July 2020 - Present

- Employed at Sandia for a year-round research position.
- Implemented Goal-Oriented Action Planning towards a classified cybersecurity problem.
- Expect multiple publications and patent from my original work.

Skills and Other Academic Interests

Formal languages: **R**, **Python**, **Matlab**, UNIX, HTML, CSS, Java, and Fortran 77.
Classical music: 13 years of piano, 6 years of guitar.
Philosophy relating to: ethics, metaphysics, epistemology, and happiness.