

# Nolan R. Bonnie

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## Education

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**B.S. in Mathematics, with a Specialization in Data Science**

**September 2017 - June 2021**

University of California, Irvine

GPA: 3.50

## Awards

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UCI UROP Fellow (with monetary grant for Ozone Weekend Effect Research)

Campuswide Honors Collegium (required honors thesis)

Deans Honor List

Recipient of the Facebook-Udacity PyTorch Scholarship

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

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UCI Engineering Student Council

**Fall 2017 - Spring 2018**

Discussion Leader for *Introduction to Machine Learning*

**Winter 2019**

Instructor at Sandia Labs for *Introduction to R and Machine Learning*

**Summer 2021**

## Coursework and Research

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### Scientific Coursework

- Engineering: Matlab, scientific computing and visualization, data analysis, machine learning.
- Computer Science: Artificial intelligence.
- Chemistry: Engineering chemistry, atmospheric chemistry.
- Math: Honors calculus, differential equations, statistics, logic, linear algebra, abstract algebra, number theory, graph theory, algorithms, real analysis, probability and stochastics, numerical methods, Bayesian statistics, optimization.
- 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.
- Expected publication in a peer-reviewed journal.

### 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 conduct research in atmospheric chemistry.

### **Undergraduate Research Study in Mathematics**

**Winter 2018, Spring 2019, Spring 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.
- Joined a graduate course led by Professor Knut Solna where we examined the mathematics behind machine learning.

## **Relevant Work Experience**

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### **Sandia National Laboratories — Cybersecurity R&D**

**July 2020 - Present**

- Employed at Sandia in a cybersecurity research and development position.
- Currently hold a Department of Energy L Clearance.
- Developed novel planning AI techniques to solve a national cyber-emulotics problem.
- Expect multiple first-author tier 1 publications and patent from AI planning work.
- Currently supporting big-data analytics and anomaly detection on network traffic.

### **Learning and Academic Resource Center — Programming Tutor**

**September 2018 - June 2020**

- Taught three supplementary course sections, with classes of 16 students every quarter.
- Supported a Matlab programming course for engineers.
- Developed lesson plans and practice tests.
- 96.3% student satisfaction from over 150 evaluations.

### **Prophet Predictive Modeling — Chief Quantitative Analyst**

**June 2019 - June 2020**

- Cofounded a financial predictions company, using AI to forecast the US Stock Market.
- Managed the acquisition and processing of data.
- Implemented AI trading models on live stock data.

### **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 synthetic data for a cybersecurity project that used AI to detect cyber attacks.

## **Skills and Other Academic Interests**

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Formal languages: R, Python, Matlab, UNIX, HTML, CSS, Java, and Fortran 77.

Classical music: 14 years of piano, 7 years of guitar.

Philosophy relating to: ethics, metaphysics, epistemology, and happiness.

Volunteering: NICA certified high school mountain biking coach.