

# Erica M. Ryan

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## PROFESSIONAL EXPERIENCE

### Economics Department, College Park MD

Research Assistant to Melissa Kearney

July 2022-Current

- Reviewing and summarizing over 30 papers on the impact of low birth rates in the U.S. and abroad.
- Producing descriptive statistics and charts in R to support presentations, papers, and proposals.

### Ipsos Facto Solutions, Remote

Economist (Consultant)

September 2021-Current

- Quickly gaining expertise in a CECL model that adjusts loss allowance forecasts for forecasted macroeconomic conditions.
- Responding both in writing and verbally to questions from client banking institutions regarding the model.
- Producing summary documents to support responding to client questions, and a response to the validation report, provided to all clients.
- Writing code in R to clean large-scale FNMA data, predict forbearance exits, and produce high quality tables and charts for the final paper in LaTeX.
- Running an R server on AWS EC2 and hosting data on S3; Using Recursive Feature Elimination to select variables and using random forest and linear models to estimate forbearance exits and compare performance.

### Fannie Mae, Washington, DC

Quantitative Modeler, Model Risk Management

June 2018-September 2020

- Researching the history of macroeconomic indicators; testing model versions with macroeconomic indicators; and preparing a presentation on best practices for the Model Risk Oversight Committee.
- Reviewing econometric models (including: cashflows, NPV for distressed assets, profile forecasts, COVID forbearance take up etc.) on a team of up to five reviewers. Reviews included: evaluating component models, usages, methodology, assumptions, limitations, and implementation; validating code; and writing a final review memo.
- Applying machine learning (tested a variety of approaches including Neural Networks, Random Forest, Nearest Neighbors) in python to improve upon current models in a company sponsored hackathon.

### The Economics Department, College Park, MD

Research Assistant (Part time)

October 2016-October 2017

- Under Dr. Murrell: Researched and cleaned the data for over 150 judges for birth and death date information.
- Under Sai Luo: Collected data on the volume of SAT/ACT test-takers per state; automated data collection/cleaning.

### NASA Goddard, Greenbelt, MD

Intern in Safety and Mission Assurance Division

June 2017-August 2017

- Compiled data on approximately 150 suppliers relevant to current NASA missions.
- Created data visualizations in Tableau and R including network diagrams and geomaps of current supply chain relationships for two NASA missions and presented a poster to over 2,500 staff at a Summer Intern Poster Session.

### The FDIC, Washington, DC

Intern in Risk Management Supervision Division

May 2016-August 2016

- Led a 3-person research group on Fintech including Roboadvisors, Neobanks, Big Data, and Cryptocurrency resulting in a briefing of the Director of RMS and other managers followed by a Q & A session.
- Contributed questions and answers relating to the creation of De Novo banks to the Briefing of the Chairman.
- Produced a matrix of AML and other violations by condensing approximately 80 Reports of Examination into a single document.

## EDUCATION

### UNIVERSITY OF MARYLAND, COLLEGE PARK, MD

Ph.D. Economics; Graduate Certificate in Fundamentals of Survey and Data Science

May 2025

- Fellowships: NSF Graduate Research Fellowship –March 2020; Flagship Fellowship – March 2020
- Interests: Labor and Public Finance Economics with a focus on housing, poverty, inequality, taxes, labor market decisions, behavioral economics
- 2<sup>nd</sup> Year Paper: on the impact of rental market on former foster youth's homelessness shortly after exiting care

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## POST BACCALAUREATE EDUCATION:

- Harvard Extension School: Linear Algebra and Real Analysis December 2019
- Indiana University East: Courses: Intro to Mathematical Proof, Differential Equations August 2019

## INDIANA UNIVERSITY, DISTANCE LEARNING UNIVERSITY OF MARYLAND, COLLEGE PARK, MD

*B.S. Economics, Magna Cum Laude; B.A. Studio Art, Magna Cum Laude, Honors*

May 2018

- GPA 3.9; Honors: DCC Honors College, Phi Beta Kappa
- Coursework: Econometrics (with time series), Game Theory, Behavioral Economics, Labor Theory, Theory of Economic Development, Probability and Statistics, Multivariable Calculus, Intermediate Micro/Macro

## SKILLS

- Proficient in: R, Python, Tableau, SQL, SAS, LaTeX, MS Suite, G Suite, Adobe Creative Suite
- Basic Knowledge of: STATA, HTML, CSS, MATLAB, Machine Learning, Spanish

## CERTIFICATIONS

- Coursera:
  - Introduction to Machine Learning: Duke University (P2J5LG2VN4KG) October 2018
  - Neural Networks and Deep Learning: DeepLearning.ai (B8CAGLPVHHM6) October 2018
  - Structuring Machine Learning Projects: DeepLearning.ai (3KS422DM9ZTR) November 2018
  - Improving Deep Neural Networks: DeepLearning.ai (9A7TU9PM4YTE) November 2018
  - Convolutional Neural Networks: DeepLearning.ai (ZCNFFU9LVR4K) December 2018
  - Sequence Models: DeepLearning.ai (HH9WYXCNAYBN) January 2019