

# Yawen Zhang

1668 Baugher Ave, Elizabethtown, PA 17022 • 223-666-1994 • [zhangy@etown.edu](mailto:zhangy@etown.edu) • <https://yawen-zhang.site>

## EDUCATION

Elizabethtown College, Elizabethtown, PA

Jan. 2017 – Dec. 2020 (Anticipated)

- B.S. in **Actuarial Science**
- Study abroad at the University of Granada, Spain (Sep. 2019 – Dec. 2019)

Major GPA: 3.62/4.00 (grade ranking: #2)

## SKILLS & EXAMS

Computer Skills: R, SQL, VBA, SAS, Mathematica, Java, Markdown and Latex

Actuarial Exams: Exam P (Passed), Exam FM (Passed), IFM (Sitting in December)

## EMPLOYMENT

**Actuarial Pricing intern** | AXA XL | New York City, NY

Jun. 2020 – Aug. 2020

- Researched the Predictive Analytics Models and Algorithms in insurance using R markdown
- Assisted in deploying machine learning models (XGBoost, Random Forest) to predict the loss ratio for Property and Marine insurance and improved the accuracy by 5%, compared with the previously used model (GLM)
- Built an interactive dashboard for leadership team using R Shiny and taught colleagues how to build dashboards
- Supported the underwriting team by providing metrics reports and creating excel templates for surcharge calculations
- Interview 20+ colleagues across business functions to gain a comprehensive understanding of how the company works

**Wealth Actuarial Intern** | Mercer | Philadelphia, PA

Jun. 2019 – Aug. 2019

- Implemented data gathering, data cleaning, and exploratory data to complete a mock valuation using a highly integrated software *Retirement Studio* and made a 20-page valuation report for the client to review
- Designed Retirement Plan Changes for clients and made graphs to visualize how the changes (from pension to 401K) benefited the employer and the employees
- Researched and presented about the Future Transformation of Retirement Plans, and 50+ colleagues attended

**Teaching Assistant** | Elizabethtown College | Elizabethtown, PA

Apr. 2018 – May. 2019

- Provided review sessions to students for courses Financial Mathematics and Introduction to Mathematical Proofs and was awarded the Best Tutor in Math Department 2019 (one student per year)

## RESEARCH EXPERIENCE

**Research Assistant** | Elizabethtown College | Elizabethtown, PA

Aug. 2020 – Present

Project: **Game Theory - Equilibrium Problem in Multiple-Strategy Game**

Supervisor: *Dr. Timothy McDevitt, Professor of Mathematical Sciences at Elizabethtown College*

- Proved that Nash equilibrium makes the conservative players, who accept ties in two strategy games, more likely to win, compared to the aggressive players who think winning is everything,
- Analyzed multiple-strategy games using matrix derivatives and linear programming, and illustrated that the phenomenon is transferable and robust in three non-zero-sum strategy games
- Used Mathematica to write a program based on Markov chain to simplify the probability metrics in Penney's game, and generalized this application numerally and symbolically, and found it align with the phenomenon

## HONORS & AWARDS

- Talked about my research "Go Big or Go Home" at the MAA EPaDel Conference (11/7/2020)
- Outstanding Senior Student in Math Department 2020 (one student per year)
- Interviewed by Advisor Smith as the leader student in Insurance, 2020
- Dean's List 2020 & 2019, Honors-in-the-Discipline in Mathematics 2020

## ACTIVITIES & LEADERSHIP

- President, Campus Asian Culture & Food Club
- Diversity Team Ambassador, Office of Admissions Elizabethtown College
- Inclusive Leadership Conference Spring 2018
- Campus Tour Guide

Sep. 2017 – Oct. 2018

Sep. 2017 – Jul. 2018

**Related Courses:** Mathematical Statistics, Statistical Methods in Research (SAS), Short Term Actuarial Mathematics, Theory of Probability, Data bases(SQL), Operations Research, Mathematical Proofs, Computer Science 1(Java), Financial Mathematics, Linear Algebra, Principles of Macroeconomics Accounting, Machine Learning(R), Long Term Actuarial Mathematics & Corporate Finance