

# ADHIRAJ B. ROKA

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## EDUCATION

<b>MS</b>	Villanova University, Villanova, PA Applied Statistics	<i>Anticipated: May 2021</i>
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<b>Cumulative GPA</b>	4.00
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<b>BS</b>	Troy University, Troy, AL Major in Mathematics Minor in Statistics	May 2019
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<b>Cumulative GPA (Major GPA)</b>	3.93(4.00)
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## PUBLICATION / RESEARCH PROJECTS

- “Motivational Attitudes in Statistics and Data Science Education Research” 2020  
(MASDER) with Dr. Posner (working research)
- “Analysis into Distraction Variables using Machine Learning” 2020
- “Women’s Choice of Contraceptive: Categorical Data Analysis” 2020
- “Modeling Loan Payment using GLM” with Haichuan Du 2020
- “Predictive Modeling on Client Continuity” with Matt Ashcroft, 2019  
Rui Zhang and Austin Alcott
- Danush Wijekularathna, Ph.D., Huijun Yi, Ph.D. and Adhiraj Roka, July, 2019  
“[Tests Based on Kurtosis for Multivariate Normality](#)”, Austrian Journal  
of Statistics, (Published).
- “Trust in Government: A Time Series” with Taylor Menke 2018
- “Factors Affecting Car Insurance Rates using  $2^k$  Factorial Design” 2017

## HONORS AND AWARDS

<b>Graduate Assistantship Award</b>	2019- Present
Merit based scholarship for full tuition and stipend at Villanova University Statistics Department.	

<b>Virgil L. Collins Mathematics Award</b>	2019
Awarded to Outstanding Mathematics Student for exceptional academic and leadership services.	

<b>Troy University Mathematics 4.0 Club Recipient</b>	2019
Awarded to undergraduate students who have maintained a 4.0 GPA in Mathematics until degree conferred.	

**American Statistical Association (ASA) Member** 2018-Present  
Main professional organization for statisticians and related professionals in the United States.

**Pi Mu Epsilon Excellence in Leadership Award** 2017  
National Mathematics Honors Society dedicated to the promotion of scholarly activity in mathematics among the students in academic institutions.

**Who's Who Among Students Award Recipient** 2016  
National college student recognition program based on outstanding campus leadership, scholastic ability, and community service.

**Troy University Chancellor's List** 2015-2019  
Full time undergraduate students who earn a GPA of 4.0 per semester.

**Chancellor's Award** 2015-2019  
Merit Based Scholarship for full tuition at Troy University.

## WORK EXPERIENCE

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**Statistics Department, Villanova University, Villanova, PA** Aug 2019- Present

- Graduate Assistant
- Working for the Mathematics and Statistics department to help complete tasks, such as grading for professors and tutoring undergraduate students for the Math Learning and Resource Center (MLRC).
- Provide statistical support as a Research Assistant for the Center for Statistics Education (CSE).
  - Teaching Assistant for the following courses:
    - STAT 7404 (Stat Methods), Fall 2020
    - STAT 4380 (Data Science), Fall 2020
    - STAT 1230 (Intro Stat), Fall 2019, 2020
    - STAT 1430 (Business Stat), Fall 2019 and Spring 2020
    - MAT 1400 (Business Calculus), Spring 2020
  - Teaching Experience:
    - STAT 4830 (Data Science), Fall 2020

**State Farm, Richardson, TX** May 2020- July 2020

- Statistician Intern
- Member of the Braking Bad team in Drive Safe and Save unit in P&C Actuarial and Underwriting Modeling and Analytics Department.
- Individual Project revolved around doing a deeper dive into the new 'Distractions' variable collected through the Drive Safe and Save app in order to better match price to

risk using different predictive modeling techniques. The primary statistical tools used were SAS and R.

- Group project involved making recommendations to different P&C departments on how they could help agents better explain rate changes to policyholders.

**Mathematics Department, Troy University, Troy, AL**

Aug 2016-May 2019

- Student Assistant
- Assisted Professors with class related activities such as proctoring exams.
- Filled basic computer programming needs to assist in professor's research.
- Tutored upper level math and stat concepts in caring and encouraging environment to help students thrive and learn.

**ALFA Insurance, Montgomery, AL**

Oct 2017- May 2018

- Property & Casualty Actuarial Intern
- Used R to clean data, displayed output using R-Shiny, analyzed output and made recommendations.
- Project on Loss Reserve report using ChainLadder package in R.
- Assisted Fellow actuaries with daily activities and attended weekly departmental meetings. Learned various actuarial concepts, such as forecasting and modeling.

**Upward Bound Program, Troy University, Troy, AL**

2016, 2017

- Resident Advisor for students during the summer program.
- Tutored students for Science and Mathematics classes.

**PRESENTATIONS AND INVITED SEMINARS**

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| • <b>Project Presentation</b> , “ <i>Analysis into Distraction Variables using Machine Learning</i> ” P&C Modeling Department, State Farm.                                | July, 2020     |
| • <b>Project Presentation</b> , “ <i>Modeling Loan Payment using GLM</i> ” College of Liberal Arts and Sciences (Villanova University).                                   | May, 2020      |
| • <b>Project Presentation</b> , “ <i>Women’s Choice of Contraceptive</i> ” College of Liberal Arts and Sciences (Villanova University).                                   | April, 2020    |
| • <b>Research Presentation</b> , “ <i>Predictive Modeling on Client Continuity</i> ”, College of Liberal Arts and Sciences (Villanova University).                        | December, 2019 |
| • <b>Seminar Presentation</b> , “ <i>New Tests for Multivariate Normality</i> ”, invited talk for Square Root of C Troy Math Club.  | May, 2018      |
| • <b>Project Presentation</b> , “ <i>Alfa Mutual Insurance Company Auto Liability YE 2017</i> ”, P&C Actuarial Department, ALFA Insurance.                                | May, 2018      |
| • <b>Research Presentation</b> , “ <i>New Tests for Multivariate Normality</i> ”, invited talk for Troy University MathFest.  | April, 2018    |
| • <b>Seminar Presentation</b> , “ <i>Actuarial Science: An Overview</i> ”, invited talk for Square Root of C Troy Math Club.  | March, 2018    |
| • <b>Project Presentation</b> , “ <i>Factors Affecting Car Insurance Rates using <math>2^k</math> Factorial Design</i> ”, College of Arts and Sciences (Troy University). | November, 2017 |

## LEADERSHIP AND SERVICES

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**President** 2017-2018

**Vice-President** 2016-2017

Square Root of C Math Club of Troy/Pi Mu Epsilon Society

- Made administrative decisions and held weekly seminars and meetings
- Assisted the Mathematics Department to organize activities such as the Annual Troy MathFest 2018, Calculus competition etc.

**President** 2016-2017

Nepali Student Association (NSA) of Troy University

- Promoted Nepalese cultural activities on campus
- Encouraged involvement of Nepalese students, supervised meetings and planned annual Nepalese cultural events at Troy.

**Secretary** 2015-2016

Computer Science Club of Troy University

- Took minutes for weekly meetings and maintained club records
- Assisted in effectively organizing events such as Game/Movie nights, coding seminars etc.

## RESEARCH INTERESTS

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- Statistical Machine Learning and Predictive Modeling
- Clinical Trials Methodology
- Applied Probability and Statistical Computing
- Deep Learning and Artificial Intelligence

## COMPUTER SKILLS/ MISCELLANEOUS

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- Extensive experience in R, SAS, LaTeX, Minitab.
- Proficient in MS Office Suite.
- Experience in Python, AWS, SQL, C++ and JAVA.
- Passed Actuarial **Exam FM** (February, 2018)
- Passed Actuarial **Exam P** (March, 2017) and **VEE Economics**.

## LANGUAGES

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- Fluent in English, Nepali, Hindi
- Basic Spanish