**Jack DeGroot**

Wantage, NJ | 862-354-1372 **|** degrootjack12@gmail | github.com/JackDeGroot

**EDUCATION**

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| **University of New Hampshire**, Durham, NH | August 22, 2021- September 1, 2023 |
| • Masters in Statistics | GPA: 3.9 |

**Marywood University**, Scranton, PA

• Bachelor of Science Mathematics and Finance

August 22, 2017 - May 19, 2021 GPA: 3.5

* First Generation College Student
* Tama Medal for Excellence in Mathematical Studies Runner Up
* Dean’s List 2017-2021

**WORK EXPEREIENCE**



**Adjunct Instructor**, University of New Hampshire**,** Durham, NH May 2022 – July 2022

* Taught MATH 644: Statistics for Engineers and Scientists to a class of ~20 junior and senior students in two weekly seminars that consisted of lectures and lab sessions.
* Introduced students to Design of Experiments, Exploratory Data Analysis, Probability and Probability Distributions, Statistical Inference including Hypothesis Testing, regression and correlation, and ANOVA.

**Teaching Assistant**, University of New Hampshire**,** Durham, NH August 2021 – May 2023

* Taught MATH 418: Precalculus & MATH 424B: Calculus for Life Sciences to three classes of ~ 20 students in two weekly recitations for three semesters
* Created innovative mathematical exercises to increase student interaction, engagement, and retention in Precalculus and Calculus course material.

**RESEARCH EXPERIENCE**



**Methods in Functional Data Analysis: Modeling Response Curves as Functions of Experimental Factors in Designed Experiments** January 2023 - September 2023

* Utilized Functional Principal Components, Bayesian Hierarchical two-stage mixed-effects model, and JMP’s Fit Curve method to model functional response curves as direct functions of experimental factors.
* . Recognized dynamic relationships between experimental factors and curve behavior to enhance predictive accuracy and optimization of experimental parameters.

**A Mathematical Model for Forecasting the Spread of Covid-19 in Pennsylvania** June 2020 - July 2021

* Worked with Cody Dosch, Heather Kwolek, and faculty advisor Dr.Craig Johnson to create a Susceptible, Vaccinated, Exposed, Infected, and Removed (SVEIR) mathematical model for the spread of Covid-19 that involved nonlinear systems of equations to help foresee the virus’s spread in a set population.
* Identified preventative measures Marywood University should implement, methods of virus transmission, and proper precautions when a student tests positive for Covid-19 while living on Marywood’s campus.

**PRESENTATIONS**



* Rose-Hulman Undergraduate Mathematics Conference, A Mathematical Model for Forecasting the Spread of Covid-19 in Pennsylvania, (Oral Presentation), April 23, 2021
* Annual Meeting of the Pennsylvania Academy of Science, A Mathematical Model for Forecasting the Spread of Covid-19 in Pennsylvania, (Oral Presentation), April 10, 2021
* Moravian College Student Mathematics Conference, A Mathematical Model for Forecasting the Spread of Covid-19 in Pennsylvania, (Oral Presentation), February 13, 2021

**TECHNICAL SKILLS**



* *Computer Languages:* R, MATLAB, Python, SAS, JMP, Excel
* *Tools:* ggplot2, dplyr, tidyr, knitr, Pandas, Numpy, Keras, Tensorflow
* *Skills:* Parametric & Non-Parametric Modeling, Times Series, Regression, Machine Learning, DOE