

MSDS Newsletter



From the MSDS Director

Welcome to the Spring 2019 semester issue of the MSDS newsletter. This is our first newsletter for the MSDS program, and it is my pleasure to share with you the latest highlights and activities.

Our program started in the Fall of 2016 with 18 full-time and part-time students which gradually increased to the approximately 100 highly qualified students we have now. We had 14 program graduates in 2018, some of which are currently working as Data Scientists, Analytics Managers and ML Engineers in companies such as Microsoft, Xerox, Novartis and start-ups in the financial services and technology fields.

Many of you have almost reached the end of a set of exciting semesters of challenges and learning and will be graduating this semester. You will be delighted to know that data scientist has been named the best job in America for three years running according to Glassdoor's 2018 rankings, and there are many jobs waiting for you once you walk out of our doors for the very last time.

In this issue we will meet our new managing director of professional programs, Mr. Mohannad Aama, learn more about Prof. Steve Buyske, find out what's going on with our practitioner seminar series, hear from some of our current students as well as one of our alumni, and see what else is new.

We hope you enjoy this newsletter. We welcome any news, comments, and suggestions you may have.



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Appointment of Managing Director of Professional Programs



We are pleased to announce that **Mr. Mohannad Aama** will be serving as the Managing Director of the newly established Office of Professional Programs of the Rutgers Statistics Department. The Office of Professional Programs will provide comprehensive and unified services to students in both FSRM and MSDS programs, combining the services we currently offer separately to FSRM and MSDS. Its functions include career development services, industry relationship, and outreach activities. The primary goal is to provide the necessary resources and training to help you achieve your professional goals. This goes beyond our efforts to: 1) increase the number and scope of industry relationships and corporate partners to bring about more job and internship opportunities for you, and 2) provide you with the needed professional assistance to successfully land and navigate job interviews.

Prior to joining Rutgers, Mr. Aama worked in the financial services industry for the past 15 years in various capacities including equity research, portfolio management and risk management. He holds an MBA degree with a concentration in Finance and Accounting from the Simon School of Business at the University of Rochester. He also holds FRM and CFP® certifications. His broad expertise and experiences will greatly enrich our programs and the department as a whole.

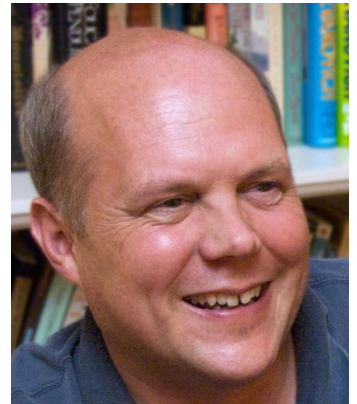
Faculty Profiles

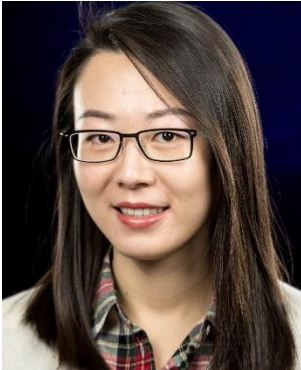
Professor Steve Buyske never graduated high school. Yet he holds not one, but TWO PhD degrees! After graduating Deep Springs College and Haverford college with a BA in Mathematics, he obtained his PhD in mathematics from Brown University in 1988, after which he taught at Lafayette College in Easton Pennsylvania. Here he first experienced statistics when asked to teach an Intro to Statistics course.

Statistics appealed to him so much that he went back to school and obtained his second PhD, this time in statistics, from Rutgers University in 1998. Rutgers hired him immediately after and he has been with us ever since.

Professor Buyske was on the MSDS committee from the start and originated the “Data Wrangling and Husbandry” course. He was also our acting director last year while Prof. Chen was on sabbatical.

What he likes best about the Data Science program is that our students come from lots of different backgrounds, be it mathematics, statistics, computer science, or one of a multitude of other fields, and many have been in the workforce for a while. All this diversity makes it certainly more challenging to teach, but also makes it so much more interesting!





Ruobin Gong is assistant professor of statistics at Rutgers University. Her research interests lie at the foundations of uncertainty reasoning, theory and methods of statistical inference with random sets, imprecise probability, Dempster-Shafer theory of belief function, as well as the computation and applications of Bayesian and generalized Bayesian modeling to robustness and privacy statistics.

Ruobin obtained her Ph.D. in statistics from Harvard University, and B.Sc. in cognitive psychology from the University of Toronto. She is a Harvard Horizons Scholar, and gave a talk at the eponymous Symposium titled "the Virtue of the Unsure" in 2017. Ruobin was a research fellow for Data Science for Social Good at the University of Chicago in 2015. Currently, Ruobin teaches MSDS 596: Regression and Time Series Analysis for Data Science, as part of the core methodology courses in the Master of Data Science program.

Practitioner Seminar Series

Jerome Gilbert - "AI Everywhere – Putting Smart to Work" On Friday February 22, 2019 the MSDS program hosted Jerome Gilbert, North America Technical Leader for System z Analytics at **IBM**. Titled "AI Everywhere – Putting Smart to Work", Jerome's presentation touched on how Data is now the basis of competitive advantage for many firms and how the growth of AI is expected to proliferate both in consumer and enterprise use and spending. The standing room only crowd listened to Jerome as he covered the 5 Machine Learning Personas (Steward, Engineer, Scientist, Developer and Analyst) and the importance of being good "Data Stewards" as the type and quantity of data collected increases and touches so many aspects of our lives.

Peter Cotton – "Building a Prediction Web" Peter Cotton, PhD, Executive Director in **J.P. Morgan's Data Science Group** gave a seminar on March 29 that covered his firm's efforts to build a "Prediction Web". Roar Data is an experiment in Collective Intelligence undertaken by J.P. Morgan, academic and industry partners. The premise is that streaming data, machine learning, micro services and cryptography support powerful new ways of organizing predictive analytics. The engineering ambition is a Prediction Web open to all - furthering the democratization of data science started by MOOCs and open source software. Peter discussed how Data Science is the "Search" -think google- for models and data and how contests and "Networks" will change this Search dramatically. He elaborated how talent is distributed evenly around the world and how opportunity is not. He described how a Prediction Web can be the shared feature space that can help solve this issue and be, among other things, the source of "hyper-specialization" in real time.

In addition to the two Data Science seminars above, MSDS students were invited to seminars hosted by the **Financial Statistics and Risk Management** program (FSRM) that dealt with financial statistics and analytics, machine learning, and algorithms.

Satish Ramakrishna – "The normal distribution is Abnormal" The FSRM program hosted Satish Ramakrishna, PhD the Chief Risk Officer at **Two Sigma Investments, LP** on April 12 who gave a stimulating seminar on non-normality in the "real" world of finance.

Kelly Ye - "The Art and Science of Hedge Fund Replication" Kelly Ye, CFA, Director of Research at **IndexIQ**, the ETF platform for **New York Life Investments** gave an overview of the hedge fund replication problem, its history, validity and the science behind hedge fund replication algorithms.

Alumni Profile



Xing Xiong is currently working for WePay as a data scientist focusing on fraud detection, where he builds machine learning models processing large numbers of daily payments. He obtained his bachelor's degree in Statistics from Tongji University in 2016, after which he joined Rutgers University to pursue a master's degree in data science. During his time there he realized he had a strong interest in data science. He had an internship with Concord Advice where he gained a lot of experience in how to apply data science techniques to do fraud detection and risk management.

"The data science program not only taught me the necessary theoretical knowledge, but also how to combine theory with practice. I liked the arrangement of the various courses, covering basic statistics knowledge, machine learning techniques, and Python coding. It guided me in my growth from college student to real-world data scientist. The faculty in the program really care about their students and are very supportive. I really enjoyed my two years as a student in the Rutgers MSDS program."

Student Profiles

Wanting Tan is a second year MSDS student who holds a bachelor's degree in statistics from China, which she says was very theoretical. She wanted to learn how to apply her knowledge and obtain practical skills to be able to get into the data science field. She chose to attend Rutgers because of the collaboration between the computer science department and the statistics department. Once here, she learned many practical skills like SQL, Python, and statistical learning; she found the classes very interesting, and especially liked the fact that she was able to take classes from both departments. She feels she has been presented with many real-world data science challenges.

Wanting is a full-time student who will be graduating this semester.



Wanting has had two internships; she was at WeWork in NYC from June 2018 to August 2018, as a data science intern on the revenue optimization team where she helped with data cleaning and data management. She also finished an individual business project and helped colleagues with their projects. She worked with SQL, R, Python, and Tableau, and noted that at this internship the focus was on inference. During her interview she asked why they had picked her for the job, and she was told that they selected her for her interpretation abilities; the translation of a statistical model into the business inside is vital to the work of a data scientist, and she was able to properly translate the meaning of the results of the statistical models.

Her second internship is at IFS Securities. She started there in February 2019 as a part-time data science intern and is expected to stay until May 2019. The company is a financial services company dealing with data related to bonds and focuses on prediction. Wanting is responsible for a project that predicts the total interest rate for those bonds. She notes that the data at this company is more complicated and there is more time needed to train the model. She enjoys the fact that she gets the opportunity here to work with people from all over the world.

Wanting is very pleased with the MSDS program and is particularly pleased with Mr. Libretti and Mr. Aama, whom she says helped her a lot with opportunities for internships and her full-time job search.



Shubhada Suresh studied electronics at the University of Mumbai, India. After receiving her undergraduate degree, she worked for 3 ½ years as a database developer in global investment banks, which made her eager to find more insight into the data she was handling. This made her apply to our MSDS program, from which she expects to graduate in May this year. Shubhada particularly liked the structure of our program as it provided a deep understanding of required topics like probability, statistical methods, data mining, and machine learning, which are essential in order to have a successful career as a data scientist. She chose the statistics track because she believes that statistics is vitally important as it gives a broader perspective to not only implement the models but also understand how they are connected and are related.

Shubhada held an internship in the summer of 2018 as a data science intern at Morgan Stanley that was extended into the fall. At Morgan Stanley she worked with R, Python, PostgreSQL, Sparkle, and UNIX. She was responsible to pinpoint performance issues in data mart ETL using statistical analysis and machine learning techniques. She also helped them building and designing machine learning models in the fields of quantitative, marketing, and fixed income, and finally helped in developing an ontology/knowledge graph of financial markets to support natural-language processing.

Morgan Stanley has offered her a full-time position starting this August.

Latest News

-Our MSDS program was recently featured in Amstat Magazine's April Issue. [Check it out](#)

-Please join the MSDS alumni private group on LinkedIn here <https://www.linkedin.com/groups/4240269/>

-Follow the MSDS program's social media feeds:

Twitter https://twitter.com/Rutgers_MSDS

LinkedIn <https://www.linkedin.com/showcase/rutgers-masters-in-data-science/>

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