

Ngoc Minh Quang Nguyen

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EDUCATION

Carnegie Mellon University

PhD, Statistics & Data Science

2022 – present

Loyola University Chicago

MS, Applied Statistics

2020 – 2021

Wittenberg University

BS, Mathematics & Data Science

2017 – 2020

RESEARCH EXPERIENCE

Carnegie Mellon University

Graduate Researcher (Advisor: Ron Yurko)

2023 – present

Carnegie Mellon University

Advanced Data Analysis Project (Advisor: Nynke Niezink)

2022 – 2023

Loyola University Chicago

Graduate Research Assistant (Advisor: Gregory J. Matthews)

2020 – 2021

Wittenberg University

Senior Honors Thesis Research (Advisor: Douglas M. Andrews)

2019 – 2020

ACADEMIC EXPERIENCE

Carnegie Mellon University

Instructor

Summer Undergraduate Research Experience (SURE) in Statistics

Summer 2024, Summer 2025

Teaching Assistant

36-460/660: Sports Analytics

Spring 2024, Spring 2025

36-468/668: Text Analysis

Fall 2023, Fall 2024, Fall 2025

Carnegie Mellon Sports Analytics Camp (CMSACamp)/

Summer 2023

Summer Undergraduate Research Experience (SURE) in Statistics

36-402/608: Advanced Methods for Data Analysis

Spring 2023

36-401/607: Modern Regression

Fall 2022

Loyola University Chicago

Instructor

STAT 103: Fundamentals of Statistics (3 sections)

Spring 2022

Wittenberg University

Math Workshop Head Tutor

2018 – 2020

Faculty Aide

2018 – 2020

Clarkston Senior High School

S.U.M. (Student Understanding Math) Assistant

2017

PUBLICATIONS

Journal Articles

Q. Nguyen, R. Yurko. A multilevel model with heterogeneous variances for snap timing in the National Football League. 2025+. *Journal of the Royal Statistical Society Series A*. doi: [10.1093/jrsssa/qnaf185](https://doi.org/10.1093/jrsssa/qnaf185); arXiv:

[2502.16313](#).

Q. Nguyen, R. Jiang, M. Ellingwood, R. Yurko. Fractional Tackles: Leveraging Player Tracking Data for Within-Play Tackling Evaluation in American Football. *Scientific Reports (Nature Portfolio)* **15**, 2148. 2025. doi: [10.1038/s41598-025-85993-1](https://doi.org/10.1038/s41598-025-85993-1); arXiv: [2403.14769](#).

Q. Nguyen, R. Yurko, G. J. Matthews. Here Comes the STRAIN: Analyzing Defensive Pass Rush in American Football with Player Tracking Data. *The American Statistician* **78**(2), 199–208. 2024. doi: [10.1080/00031305.2023.2242442](https://doi.org/10.1080/00031305.2023.2242442); arXiv: [2305.10262](#).

Editors' Choice Collection.

Q. Nguyen, G. J. Matthews. Filling the Gaps: A Multiple Imputation Approach to Estimating Aging Curves in Baseball. *Journal of Sports Analytics* **10**(1), 77–85. 2024. doi: [10.3233/JSA-240744](https://doi.org/10.3233/JSA-240744); arXiv: [2210.02383](#).

N. M. Lemon, L. K. Taylor, M. A. Rech, **Q. Nguyen**, G. J. Matthews, G. Lew, S. Lovett. Utility of D-dimer in predicting pulmonary embolism in patients with COVID-19 presenting to the emergency department. *Journal of the American College of Emergency Physicians Open* **5**(4), e13237. 2024. doi: [10.1002/emp2.13237](https://doi.org/10.1002/emp2.13237).

B. S. Baumer, G. J. Matthews, **Q. Nguyen**. Big Ideas in Sports Analytics and Statistical Tools for their Investigation. *Wiley Interdisciplinary Reviews: Computational Statistics* **15**(6), e1612. 2023. doi: [10.1002/wics.1612](https://doi.org/10.1002/wics.1612); arXiv: [2301.04001](#).

Q. Nguyen. Poisson Modeling and Predicting English Premier League Goal Scoring. *New England Journal of Statistics in Data Science* **1**(1), 95–101. 2023. doi: [10.51387/21-NEJSDS1](https://doi.org/10.51387/21-NEJSDS1); arXiv: [2105.09881](#).

Q. Nguyen, H. Butler, G. J. Matthews. An Examination of Olympic Sport Climbing Competition Format and Scoring System. *Journal of Data Science* **20**(2), 156–167. 2022. doi: [10.6339/22-JDS1042](https://doi.org/10.6339/22-JDS1042); arXiv: [2111.05310](#).

Under Review

Q. Nguyen, R. Yurko. A Bayesian circular mixed-effects model for explaining variability in directional movement in American football. 2025+. arXiv: [2507.06122](#).

Q. Nguyen, P. Campana, N. M. D. Niezink. Co-evolution of cooperation and conflict among organized crime groups: Evidence from the United Kingdom. 2025+.

R. Yurko, **Q. Nguyen**, K. Pelechrinis. NFL Ghosts: A framework for evaluating defender positioning with conditional density estimation. 2024+. arXiv: [2406.17220](#).

Other

Q. Nguyen, R. Yurko. Down, set, hut! Explaining variability in snap timing on plays with motion. NFL Big Data Bowl 2025. <https://www.kaggle.com/code/tindata/down-set-hut>

Q. Nguyen, L. Jiang, M. Ellingwood, R. Yurko. Momentum-based fractional tackles. NFL Big Data Bowl 2024. <https://www.kaggle.com/code/tindata/momentum-based-fractional-tackles>

G. J. Matthews, **Q. Nguyen**. STRAIN: Sacks, Tackles, Rushing, Aggression INdex. NFL Big Data Bowl 2023. <https://www.kaggle.com/code/statsinthewild/strain-sacks-tackles-rushing-aggression-index>

B. S. Baumer, **Q. Nguyen**, G. J. Matthews. CRAN Task View: Sports Analytics. The Comprehensive R Archive Network. 2022. <https://cran.r-project.org/web/views/SportsAnalytics.html>

SELECTED PRESENTATIONS

Talks

Q. Nguyen, R. Yurko. NFL CoD: A Bayesian circular mixed-effects model for explaining variability in directional movement in American football. *New England Symposium on Statistics in Sports*. September 2025.

Q. Nguyen. Advances in pass rush and change of direction evaluation in American football with player tracking data. *U.S. Olympic and Paralympic Performance Innovation Summit*. August 2025.

Q. Nguyen. NFL CoD. *Uncontrolled Variables: A Science & Comedy Show*. August 2025.

Q. Nguyen, R. Yurko. Down, set, hut! Explaining variability in snap timing on plays with motion. *2025 Joint Statistical Meetings*. August 2025.

Q. Nguyen, R. Yurko. Step-and-turn modeling of individual player movement in American football. *Conference on Predictive Inference in Sports*. June 2025.

Q. Nguyen, R. Yurko. Explaining variability in player turning behavior in the National Football League. *CMSAC Football Analytics Workshop 2025*. May 2025.

Q. Nguyen. Advances in pass rush and tackling evaluation in American football with player tracking data. *2024 Joint Statistical Meetings*. August 2024.

Invited Paper Session: Leveraging Player Tracking Data in Sports: Challenges and Opportunities

Q. Nguyen, L. Jiang, M. Ellingwood, R. Yurko. Fractional tackles. *UConn Sports Analytics Symposium*. April 2024.

Big Data Bowl Finalists Session

Q. Nguyen, L. Jiang, M. Ellingwood, R. Yurko. Momentum-based fractional tackles. *NFL Big Data Bowl 2024 Final*. February 2024.

Finalist (Top 5 + \$12,500 prize + Presented at 2024 NFL Scouting Combine)

Q. Nguyen. Opportunities in sports analytics with player tracking data: A case study of NFL pass rush evaluation. *Data Science Seminar, Loyola University Chicago*. November 2023.

Q. Nguyen, R. Yurko, G. J. Matthews. Here Comes the STRAIN: Analyzing Defensive Pass Rush in American Football with Player Tracking Data. *New England Symposium on Statistics in Sports*. September 2023.

Featured talk

G. J. Matthews, **Q. Nguyen**. STRAIN: Sacks, Tackles, Rushing, Aggression INdex. *NFL Big Data Bowl 2023 Final*. March 2023.

Finalist (Top 8 + \$10,000 prize + Presented at 2023 NFL Scouting Combine)

Q. Nguyen, G. J. Matthews. Estimating Aging Curves: Using Multiple Imputation to Examine Career Trajectories of MLB Offensive Players. *Carnegie Mellon Sports Analytics Conference*. October 2022.

Finalist, Open Methodology Track, Reproducible Research Competition

Q. Nguyen, H. Butler, G. J. Matthews. An Examination of Olympic Sport Climbing Competition Format and Scoring System. *Cascadia Symposium on Statistics in Sports*. September 2022.

Q. Nguyen, H. Butler, G. J. Matthews. An Examination of Sport Climbing's Competition Format and Scoring System. *Carnegie Mellon Sports Analytics Conference*. November 2021.

Winner, Open Methodology Track, Reproducible Research Competition

Posters

Q. Nguyen, H. Butler, G. J. Matthews. Concerns Regarding Sport Climbing Competition Format and Scoring System: Who's Suffering? *UConn Sports Analytics Symposium*. October 2021.

Winner, Student Poster Award

Q. Nguyen. Poisson Modeling and Predicting English Premier League Goal Scoring. *NextGen: Data Science Day - New England Statistical Society*. November 2020.

Co-Winner, Poster Competition, Undergrad/MS Group

Q. Nguyen. Poisson Modeling and Predicting English Premier League Goal Scoring. *Carnegie Mellon Sports Analytics Conference*. October 2020.

Q. Nguyen. Poisson Modeling and Predicting English Premier League Goal Scoring. *UConn Sports Analytics Symposium*. October 2020.

Tutorials and Workshops

Q. Nguyen. Rcpp: A primer. *StatBytes Statistical Computing Seminars (Department of Statistics & Data Science, Carnegie Mellon University)*. November 2025.

Q. Nguyen. Building a performance metric with player tracking data. *Connecticut Sports Analytics Symposium*. April 2025.

Player Tracking Data in Sports Analytics Workshop (Advanced Level)

Q. Nguyen. Get Trained & Get Strained: The Ingredients of a Big Data Bowl Metric. *Carnegie Mellon Sports Analytics Conference*. November 2023.

Big Data Bowl Workshop Sponsored by SumerSports

Guest Lectures

Q. Nguyen. Bayesian multilevel modeling in the wild: Beyond homogeneity. *Special Topics: Sports Analytics*. March 2025.

Q. Nguyen. Big Data Bowl: Overview, Getting Started, My Experience, and more. *Summer Undergraduate Research Experience in Statistics (Carnegie Mellon Sports Analytics Camp)*. July 2023.

Q. Nguyen. Web Scraping: A Primer. *Summer Undergraduate Research Experience in Statistics (Carnegie Mellon Sports Analytics Camp)*. July 2023.

HONORS & AWARDS

Sports Analytics Student Award	2025
Carnegie Mellon Statistics & Data Science (Funded by the Richardson Matano Family)	
NFL Big Data Bowl Semifinalist	2025
NFL Big Data Bowl Finalist	2023, 2024
Invited to present at NFL Scouting Combine	
ASA Section on Statistics in Sports Student Funding	2024
ASA Section on Statistics in Sports	
Graduate Student Assembly/Provost Conference Funds	2024
Carnege Mellon University	
Student Travel Support	2024
UConn Sports Analytics Symposium 2024	
Reproducible Research Competition Finalist (Open Methodology Track)	2022
Carnege Mellon Sports Analytics Conference 2022	
University of Toronto Sports Analytics Group (UTSPAN) Scholarship	2022
Cascadia Symposium on Statistics in Sports 2022	
Reproducible Research Competition Winner (Open Methodology Track)	2021
Carnege Mellon Sports Analytics Conference 2021	
Student Poster Award Winner	2021
UConn Sports Analytics Symposium 2021	
Merit Award	2020 – 2021
MS in Applied Statistics Program, Loyola University Chicago	
Poster Competition Co-Winner (Undergrad/MS Group)	2020
NextGen: Data Science Day 2020 (New England Statistical Society)	
Summa Cum Laude	2020
Graduated with the highest distinction, Wittenberg University	

Departmental Honors	2020
Department of Mathematics and Computer Science, Wittenberg University	
Phi Beta Kappa	2020
Omicron of Ohio Chapter, Wittenberg University	
Pi Mu Epsilon	2020
Ohio Upsilon Chapter, Wittenberg University	
The Charles and Elsie Little Mathematics Award	2020
Department of Mathematics and Computer Science, Wittenberg University	
Awarded to the most outstanding senior majoring in mathematics and data science	
Mortar Board	2020
Wittenberg University	
Pick and Pen	2019
Wittenberg University	
Mathematics 202 Award	2018
Department of Mathematics and Computer Science, Wittenberg University	
Awarded to an outstanding first-year student in the introductory calculus sequence	
Textbook Award	2018
Department of Mathematics and Computer Science, Wittenberg University	
Phi Eta Sigma	2018
Wittenberg University	
Dean's List	All semesters; 2017 – 2020
Wittenberg University	

SKILLS

Computing: R/RStudio (expert); Python, SQL, SAS, Git/GitHub (intermediate)

Typesetting: markdown, L^AT_EX (proficient)

Bilingual: Vietnamese (native language) and English (proficient)

SERVICES

Organizer

Carnegie Mellon Sports Analytics Center (CMSAC) Research Lab (formerly Statistics in sports reading/research group)	2023 – present
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Program Committee

Connecticut Sports Analytics Symposium	2025
UConn Sports Analytics Symposium	2024

Reviewer

Journal of Quantitative Analysis in Sports

Machine Learning

The American Statistician

WIREs Computational Statistics

Judge

CMSAC 2025 Reproducible Research Competition	2025
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CSAS 2025 Student Poster Award	2025
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CSAS 2025 Data Challenge	2025
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CMSAC 2024 Reproducible Research Competition	2024
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UCSAS 2024 Student Poster Award	2024
UCSAS 2024 USOPC Data Challenge	2024
Mentoring	
Women in Data Science (WiDS) Chicago Datathon	2022
Statistical Consulting	
Carnegie Mellon University Athletics	2024
Loyola University Chicago	2021 – 2022
(Clients: Stritch School of Medicine; Department of Biology; City of Milwaukee Assessor's Office)	

MEDIA

Watt vs. Garrett? Metcalf vs. Pickens? Quang Nguyen Uses Next Gen Stats To Evaluate Player Performance	2025
Dietrich College of Humanities and Social Sciences, Carnegie Mellon University https://www.cmu.edu/dietrich/statistics-datasience/news/2025/sports-analytics-quang-nguyen.html	
Committee Collaboration Yields Editors' Choice Collection	2024
Amstat News (American Statistical Association) https://magazine.amstat.org/blog/2024/01/02/editors-choice-collection	
An Examination of Sport Climbing with Quang Nguyen	2022
Open Source Sports Podcast, Episode IX Guest https://opensourcesports.substack.com/p/an-examination-of-sport-climbing-a1e	
Viz Buzz	2022
Episodes 2, 3, 4, 5 Contestant (Episodes 3 & 4 Lap Winner) https://youtube.com/playlist?list=PL2rVQ3cmgOyx_CdtKOAOoX2pikOcc_xu-	
Can you pick the AFL's Brownlow Medal winner without knowing the first thing about Australian rules?	2021
ABC News (Australia) https://www.abc.net.au/news/2021-09-19/afl-trying-to-predict-the-2021-brownlow-medal-winner/100472246	

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