

Ngoc Minh Quang Nguyen

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EDUCATION

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|---|----------------|
| 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

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| 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

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| Carnegie Mellon University Instructor Summer Undergraduate Research Experience (SURE) in Statistics | Summer 2024, Summer 2025 |
| Teaching Assistant 36-460/660: Sports Analytics 36-468/668: Text Analysis Carnegie Mellon Sports Analytics Camp (CMSACamp)/ Summer Undergraduate Research Experience (SURE) in Statistics | Spring 2024, Spring 2025 Fall 2023, Fall 2024 Summer 2023 |
| 36-402/608: Advanced Methods for Data Analysis 36-401/607: Modern Regression | Spring 2023 Fall 2022 |
| Loyola University Chicago Instructor STAT 103: Fundamentals of Statistics (3 sections) | Spring 2022 |
| Wittenberg University Math Workshop Head Tutor Faculty Aide | 2018 – 2020 2018 – 2020 |
| Clarkston Senior High School S.U.M. (Student Understanding Math) Assistant | 2017 |

PUBLICATIONS

Journal Articles

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.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](#).

Preprints

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, R. Yurko. A multilevel model with heterogeneous variances for snap timing in the National Football League. 2025+. [arXiv: 2502.16313](#).

R. Yurko, **Q. Nguyen**, K. Pelechris. 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. 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, 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.

Workshops

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

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| NFL Big Data Bowl Semifinalist | 2025 |
| NFL Big Data Bowl Finalist Invited to present at NFL Scouting Combine | 2023, 2024 |
| ASA Section on Statistics in Sports Student Funding ASA Section on Statistics in Sports | 2024 |
| Graduate Student Assembly/Provost Conference Funds Carnegie Mellon University | 2024 |
| Student Travel Support UConn Sports Analytics Symposium 2024 | 2024 |
| Reproducible Research Competition Finalist (Open Methodology Track) Carnegie Mellon Sports Analytics Conference 2022 | 2022 |
| University of Toronto Sports Analytics Group (UTSPAN) Scholarship Cascadia Symposium on Statistics in Sports 2022 | 2022 |
| Reproducible Research Competition Winner (Open Methodology Track) Carnegie Mellon Sports Analytics Conference 2021 | 2021 |
| Student Poster Award Winner UConn Sports Analytics Symposium 2021 | 2021 |
| Merit Award MS in Applied Statistics Program, Loyola University Chicago | 2020 – 2021 |
| Poster Competition Co-Winner (Undergrad/MS Group) NextGen: Data Science Day 2020 (New England Statistical Society) | 2020 |
| Summa Cum Laude Graduated with the highest distinction, Wittenberg University | 2020 |
| Departmental Honors Department of Mathematics and Computer Science, Wittenberg University | 2020 |
| Phi Beta Kappa Omicron of Ohio Chapter, Wittenberg University | 2020 |
| Pi Mu Epsilon Ohio Upsilon Chapter, Wittenberg University | 2020 |
| The Charles and Elsie Little Mathematics Award Department of Mathematics and Computer Science, Wittenberg University Awarded to the most outstanding senior majoring in mathematics and data science | 2020 |
| Mortar Board Wittenberg University | 2020 |

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| Pick and Pen Wittenberg University | 2019 |
| Mathematics 202 Award Department of Mathematics and Computer Science, Wittenberg University Awarded to an outstanding first-year student in the introductory calculus sequence | 2018 |
| Textbook Award Department of Mathematics and Computer Science, Wittenberg University | 2018 |
| Phi Eta Sigma Wittenberg University | 2018 |
| Dean's List Wittenberg University | All semesters; 2017 – 2020 |

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

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

CSAS 2025 Student Poster Award 2025
CSAS 2025 Data Challenge 2025
CMSAC 2024 Reproducible Research Competition 2024
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

Committee Collaboration Yields Editors' Choice Collection 2024
Amstat News (American Statistical Association)
<https://magazine.amstat.org/blog/2024/01/02/editors-choice-collection>

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| An Examination of Sport Climbing with Quang Nguyen Open Source Sports Podcast, Episode IX Guest https://opensourceports.substack.com/p/an-examination-of-sport-climbing-a1e | 2022 |
| Viz Buzz Episodes 2, 3, 4, 5 Contestant (Episodes 3 & 4 Lap Winner) https://youtube.com/playlist?list=PL2rVQ3cmgOyx_CdtKOAOoX2pikOcc_xu- | 2022 |
| Can you pick the AFL's Brownlow Medal winner without knowing the first thing about Australian rules? ABC News (Australia) https://www.abc.net.au/news/2021-09-19/afl-trying-to-predict-the-2021-brownlow-medal-winner/100472246 | 2021 |

Last updated May 18, 2025