# QUAN NGUYEN

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University of Michigan
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## EDUCATION

2016 – 2019 **Ph.D., Learning Analytics**, Open University UK.

Learning analytics is the application of data science on large educational datasets. My research analyzed student learning behaviors using click-stream data (e.g. millions to billions of data points) collected from learning systems.

Advisors: Prof. Bart Rienties, Prof. Denise Whitelock

2015 – 2016 **M.Sc. Economics**, Maastricht University, Netherlands (with distinction)

2012 – 2015 **B.Sc., Economics**, Maastricht University, Netherlands

## APPOINTMENTS

10/2019 – Now **Postdoctoral Research Fellow** in Educational Data Science, School of Information, University of Michigan – Ann Arbor, United States.

Affiliated faculty at the Michigan Institute for Data Science (MIDAS)

Winter 2021 **Adjunct Lecturer** in the online Master of Applied Data Science School of Information, University of Michigan

01/2018 – 07/2019 **Lead Instructor** in Applied Statistics, University of Arts London.

10/2016 – 10/2019 **Data Analyst & Research Associate,** Open University UK

## TEACHING EXPERIENCE

Winter 2021 **Adjunct Lecturer**. **Master of Applied Data Science – Online**.
School of Information, University of Michigan.
SIADS 505 - Data Manipulation (pandas, regex)
SIADS 532 - Data Mining I (item sets, vectors, matrices, sequences)
SIADS 632 - Data Mining II (N-gram, Hidden Markov, time-series)
SIADS 680 - Learning Analytics (Supervised learning, Predictive biases, Data visualization). I co-design this course from scratch, focusing on developing assignments in Jupyter notebook using nbgrader.

2018- 2019 **Lead Instructor. Applied Statistics**, University of Arts London. Design syllabus, give lectures, supervise, and carry out assessments in quantitative research methods in experimental design for social sciences students in 4 undergrad classes (20-25 students per class).

Fall 2013 **Teaching Assistant. Quantitative Methods I**, Maastricht University
Fall 2015 Run lab sessions of 15 undergrad econ classes (30 students each).

Winter 2016 **Teaching Assistant. Management Information System**, Maastricht University. Facilitate Problem-Based Learning tutorials of 3 undergrad econ classes (12-15 students per class).

## COMPUTATIONAL SKILLS

- Statistical analysis: R, Python
- Data visualizations: Tableau, R
- Database: SQL
- Version control: Github, docker, basic Unix

## RECENT CONFERENCE ACTIVITIES

### 2021

1. **AERA 21**: Roundtable on Advanced Statistical Methods for Complex Data. Presenting paper "Identifying friendship layers in peer interactions on campus from spatial co-occurrences.". April 9-12, 2021 **(virtual conference)**
2. **LASI 21:** Workshop leader on time-series analysis in Learning Analytics Summer Institute 2021, hosted by UBC. Expected June 2021. **(virtual conference)**

### 2020

1. **EDM 2020**: the 13th International Conference on Educational Data Mining. Ifrane, Morocco, July 10-13, 2020. **(virtual conference)**
2. **LAK 20**: International conference of Learning Analytics & Knowledge. Goethe University, Frankfurt, Germany. March 23-27 **(virtual conference)**
3. **AERA 20** Satellite conference in Educational Data Science, Stanford University, San Francisco, April 22-23 **(virtual conference)**
4. **LASI 20**: Workshop leader in Learning Analytics Summer Institute, co-hosted by NYU and Columbia University, New York, June 8-10 **(cancelled due to the pandemic)**

## AWARDS AND FELLOWSHIPS

**Best full paper award**, 8th International conference on Learning Analytics & Knowledge (LAK18), Sydney, Australia, 2018 (355 submissions, 30% acceptance rate)

**Best paper award**, 5th conference of Learning and Collaboration Technologies, organized as part of the 19th International conference in Human-Computer Interaction (HCII17), Vancouver, Canada, 2017 (4,340 submissions, 28% acceptance rate)

**Best paper award,** at the 16th International Conference on Cognition and Exploratory Learning in Digital Age (CELDA 2019).

**Research Excellence Awards – runner up** ($1,200) - Impact of Research on OU Teaching & Learning, Curriculum and Students, 2018

**Leverhulme Doctoral Scholarship** (£70,000) PhD funding for three years 2016-2019

**Travel scholarship**, ($2,000), Best paper International Alliance session, London Festival of Learning, UK, 2018.

**Travel scholarship**, ($1,000), Doctoral consortium in the 7th International Conference of Learning Analytics & Knowledge (LAK17), 2017.

**Travel scholarship**, ($1250), Learning Analytic Summer Institute (LASI) 2019, Vancouver, Canada

## GRANTS

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| **Students' mobility patterns on campus and the implications for the recovery of campus activities post-pandemic.** | **Awarded** |
| Sponsor: Michigan Institute for Data Science (MIDAS) | $30,000 |
| Team: Quan Nguyen (PI), Christopher Brooks, Daniel Romero, Tim McKay, Ben Koester | May-Dec 2020 |
| | PI |
| **Longitudinal investigation of peer interactions on campus using spatial-temporal networks.** | **Under-review** |
| Sponsor: NSF Improving Undergraduate STEM Education (IUSE). | $299,365 |
| Team: Quan Nguyen (PI), Christopher Brooks, Tim McKay, Ben Koester | 2021-2022 |
| | PI |
| **Data-informed Learning Design for Future Schools** | **Awarded** |
| Sponsor: Beijing Normal University | $20,000 |
| Team: Wayne Holmes (PI), Quan Nguyen, Bart Rienties, Denise Whitelock, Jingjing Zhang (BNU), Manolis Mavrikis (UCL) | Jan – Dec 2017 |
| | Co-applicant |

## PUBLICATIONS

**Google Scholar:** http://scholar.google.com/citations?user=2ELBBq4AAAAJ&hl=en
465 citations since 2016, h-index = 12 , i-10 index =13

**Journal Articles & Refereed Conference [stringently peer-reviewed]**

In the field of learning analytics and educational data mining, conference proceedings are highly selective with a double-blind peer review process. Approximate acceptance rate: LAK: 30%, EDM: 30%

1. **Nguyen, Q.**, Rienties, B., Richardson, J. (2020). Learning analytics to uncover inequality in behavioural engagement and academic attainment in a distance learning setting. *Assessment & Evaluation in Higher Education, 45 (4), 594-606.*
2. **Nguyen, Q.,** Poquet, O., Brooks, C., Li, W. (2020). Exploring homophily in demographics and academic performance using spatial-temporal student networks. *In proceedings of 13th International Conference on Educational Data Mining (EDM 2020), pp. 194 – 201*.
3. **Nguyen, Q.,** Rienties B., Whitelock, D. (accepted). A mixed-method study into how instructors design for learning in online and distance education. *Journal of Learning Analytics (pp.)*
4. **Nguyen, Q.** (2020). Rethinking time-on-task estimation with outlier detection accounting for individual, time, and task differences. *In Proceedings of the 10th International Conference on Learning Analytics and Knowledge LAK20* (pp. 376-381), Frankfurt, Germany.
5. Tempelaar, D., Rienties, B., & **Nguyen, Q.** (in press). The Contribution of Dispositional Learning Analytics to Precision Education. *Educational Technology & Society, xx (x), xx–xx.*
6. Tempelaar, D., **Nguyen, Q.,** Rienties, B. (2020). Individual differences in the preference for worked examples: lessons from an application of dispositional learning analytics. *Applied Cognitive Psychology, 34*(4), 890-905.
7. Tempelaar, D., Rienties, B., & **Nguyen, Q.** (2020). Subjective data, objective data and the role of bias in predictive modelling: Lessons from a dispositional learning analytics application. *Plos one*, *15*(6), e0233977.
8. Rienties, B., Tempelaar, T., **Nguyen, Q.**, Littlejohn, A. (2019). Unpacking the intertemporal impact of self-regulation in a blended mathematics environment. *Computers in Human Behavior*, 100, 345-357.
9. Wayne, H., **Nguyen, Q.**, Zhang, J., Mavrikis, M,. Rienties, B. (2019). Learning Analytics for Learning Design in Online Distance Learning. Distance Education, 40 (3), 309-329.
10. Tempelaar, D., Rienties, B., & **Nguyen, Q.** (2019). Learning engagement, learning outcomes, and learning gains: Lessons from learning analytics (**best paper award).** Paper presented at the *16th International Conference on Cognition and Exploratory Learning in Digital Age (CELDA 2019)*.
11. Tempelaar, D., Rienties, B., & **Nguyen, Q.** (2019). Analysing the use of worked examples and tutored and untutored problem-solving in a dispositional learning analytics context. In: *Proceedings of the 11th International Conference on Computer Supported Education*, 02-04 May 2019, Heraklion, Crete, Greece, Volume 1, pp 294-301
12. Tempelaar, D., Rienties, B., Mittelmeier, J., **Nguyen, Q.** (2018). Student profiling in a dispositional learning analytics application using formative assessment. *Computers in Human Behavior, 78, 408-420.*
13. Tempelaar, D., Rienties, B., & **Nguyen, Q.** (2018). A multi-modal study into students' timing and learning regulation: time is ticking. *Interactive Technology and Smart Education, 15(4). 298–313*

14. **Nguyen, Q.**, Thorne, S., & Rienties, B. (2018). How do students engage with computer-based assessments: impact of study breaks on intertemporal engagement and pass rates. *Behaviormetrika, 45(2), 597–614.*
15. **Nguyen, Q.,** Huptych, M., Rienties, B. (2018). Using temporal analytics to detect inconsistencies between learning design and students' behaviours. *Journal of Learning Analytics, 5(3),* 120-135.
16. Mittelmeier, J., Edwards, R. L., Davis, S. K., **Nguyen, Q.**, Murphy, V., Brummer, L., & Rienties, B. (2018) "A double-edged sword. This is powerful, but it could be used destructively": Perspectives of early career researchers on learning analytics. *Frontline Learning Research, 6(2), 20-38.*
17. **Nguyen, Q.**, Huptych M., Rienties. B. (2018). Linking student's timing of engagement with learning design and academic performance (**best full paper award**). In *Proceedings of the 8th International Conference on Learning Analytics and Knowledge (LAK18)*, pp. 141-150, Sydney, Australia. ACM, NY, USA.
18. Tempelaar, D., Rienties, B., & **Nguyen, Q.** (2018). Investigating learning strategies in a dispositional learning analytics context: the case of worked examples. In *Proceedings of the 8th International Conference on Learning Analytics and Knowledge* (pp. 201-205). Sydney, Australia. ACM, NY, USA.
19. Tempelaar, D., Rienties, B., **Nguyen, Q.** (2018). Analysing the Use of Worked Examples and Tutored and Untutored Problem-Solving in a Dispositional Learning Analytics Context. In: *Proceedings of the 10th International Conference on Computer Supported Education*, 01-02 Feb 2018, Funchal, Madeira, pp. 294–301.
20. **Nguyen, Q**., Rienties, B., Toetenel, L., Ferguson, R., & Whitelock, D. (2017). Examining the designs of computer-based assessment and its impact on student engagement, satisfaction, and pass rates. *Computers in Human Behavior*, 76, 703-714.
21. Tempelaar, D., Rienties, B., & **Nguyen, Q.** (2017). Adding dispositions to create pedagogy-based Learning Analytics. *Zeitschrift für Hochschulentwicklung, 12*(1), 15-35.
22. Tempelaar, D. T., Rienties, B., & **Nguyen, Q**. (2017). Towards Actionable Learning Analytics Using Dispositions. *IEEE Transactions on Learning Technologies, 10*(1), 6-16.
23. Rienties, B., **Nguyen, Q.**, Holmes, W., Reedy, K. (2017). A review of ten years of implementation and research in aligning learning design with learning analytics at the Open University UK. *Interaction Design and Architecture(s). N.33, pp. 134-154.*
24. Rienties, B., Lewis, T., McFarlane, R., **Nguyen, Q.,** & Toetenel, L. (2017). Analytics in online and offline language learning environments: the role of learning design to understand student online engagement. *Journal of Computer-Assisted Language Learning, 31(3), 273-293.*
25. **Nguyen, Q**., Rienties, B., & Toetenel, L. (2017). Mixing and matching learning design and learning analytics (**best paper award**). In P. Zaphiris & A. Ioannou (Eds.), *Learning and Collaboration Technologies: Forth International Conference, LCT 2017, Part II, Held as Part of HCI International 2017, Proceedings* (Vol. 10296, pp. 1-15). Cham: Springer International Publishing.
26. **Nguyen, Q.,** Rienties, B., & Toetenel, L. (2017). *Unravelling the dynamics of instructional practice: a longitudinal study on learning design and VLE activities*. In: Proceedings of the

7th International Learning Analytics & Knowledge Conference, LAK 17, ACM, New York, NY, USA, pp. 168–177.

27. **Nguyen, Q**., Tempelaar, D. T., Rienties, B., & Giesbers, B. (2016). What learning analytics based prediction models tell us about feedback preferences of students. *Quarterly Review of Distance Education, 17*(3), 13-33.
28. Mittelmeier, J., Tempelaar, D., Rienties, B., & **Nguyen, Q**. (2016). Learning analytics to understand cultural impacts on technology enhanced learning. Paper presented at the *13th International Conference on Cognition and Exploratory Learning in Digital Age (CELDA 2016), 219-226.*

**Book chapters**

1. Tempelaar, D., **Nguyen, Q.**, Rienties, B. (2019). Learning Feedback Based on Dispositional Learning Analytics. In M. Virvou et al. (eds.*), Machine Learning Paradigms*, 69-89, Intelligent Systems
2. Tempelaar, D., **Nguyen, Q.**, & Rienties, B. (2020). Learning Analytics and the Measurement of Learning Engagement. In D. Ifenthaler & D. Gibson (Eds.), *Adoption of Data Analytics in Higher Education Learning and Teaching* (pp. 159-176). Cham: Springer International Publishing.
3. Tempelaar, D., Rienties, B., **Nguyen, Q.** (2020). Feedback Preferences of Students Learning in a Blended Environment: Worked Examples, Tutored and Untutored Problem-Solving. In H. C. Lane et al. (Eds.): *Computer Supported Education, Communications in Computer and Information Science (CCIS) 1220*, pp. 51–70, 2020. Springer.

**Under review**

1. **Nguyen, Q.**, Herodotou, C., Thorne, S., Rienties, B. (2019). Student engagement with digital online courses at the Open University: what is the impact of learning design and study breaks on engagement? In Conole, G., Brown, M., Mhichil, M. (Eds.), *Taking the craic: tales of digital learning in Higher Education.* Springer.
2. **Nguyen, Q.,** Brooks, C., Poquet. O. (accepted). Identifying friendship layers in peer interactions on campus from spatial co-occurrences. To be presented at AERA 21
3. **Nguyen, Q.,** Brooks, C. (under review). Detecting social hierarchy in student networks at scale: Validating the Dunbar's numbers in residential education. Submitted to LAK21

## INVITED TALKS & RESEARCH VISITS

2020 **University of Texas, Arlington**, LINK research lab. Arlington, TX, Jan 17th.

2019 **University of Michigan,** Center of Academic Innovation. Ann Arbor, MI, Nov 8th

2018 **London Festival of Learning,** Best papers alliance. "Linking students' timing of engagement to learning design and academic performance". London, June 27th

2018 **Blackboard.** "Linking students' timing of engagement to learning design and academic performance". Webinar, June 14th

2017 **University of Edinburgh,** research visit hosted by Prof. Dragan Gasevic and Prof. Yannis Dimiatris, Edinburgh

2017 **Open University UK,** OU Learning Design/TEL Special Interest Group. "Informing learning design with learning analytics". Milton Keynes, UK, September 20th

2017 **Open University UK,** "Debunk bullshit in statistics – Misconceptions, misinterpretations, and misrepresentation of statistics in social science and beyond", Milton Keynes, UK, December 7th

2016 **JISC Beyond Learning Analytics**. "Unravelling the dynamics of instructional practice. A longitudinal study on learning design and VLE activities". Milton Keynes, UK, October 26th

## CONFERENCE ACTIVITIES

### 2021

1. **AERA 21**: Roundtable on Advanced Statistical Methods for Complex Data. Presenting paper "Identifying friendship layers in peer interactions on campus from spatial co-occurrences."
2. **LASI 21:** Workshop leader in Learning Analytics Summer Institute 2021, hosted by UBC

### 2020 (upcoming)

1. **EDM 2020**: the 13th International Conference on Educational Data Mining. Ifrane, Morocco, July 10-13, 2020. **(virtual conference)**
2. **LAK 20**: International conference of Learning Analytics & Knowledge. Goethe University, Frankfurt, Germany. March 23-27 **(virtual conference)**
3. **AERA** Satellite conference in Educational Data Science, Stanford University, San Francisco, April 22-23 **(virtual conference)**
4. **LASI**: Workshop leader in Learning Analytics Summer Institute, co-hosted by NYU and Columbia, New York, June 8-10 **(cancelled due to the pandemic)**

### 2019

1. Learning analytics summer institute LASI 19, Vancouver Canada.

### 2018

1. **"**Linking student's timing of engagement to learning design and academic performance". *The 8th International Conference on Learning Analytics and Knowledge (LAK18)*, March 2018, Sydney, Australia.

2. "How do students engage with Computer-Based Assessments: Impact of study breaks on intertemporal engagement and pass rates". *The 40th Annual CALRG conference*, 2018, June 18-19th

3. **"**Linking student's timing of engagement with learning design and academic performance". *London Festival of Learning*, Best paper alliance session.

**2017**

1. "Mixing and matching learning design and learning analytics", *4th conference of Learning & Collaboration Technologies, as part of the 19th International Human-Computer Interaction (HCII17)*, 2017, July 9-14

2. "Unravelling the dynamics of instructional practice: a longitudinal study on learning design and VLE activities", *the 7th Learning Analytics & Knowledge (LAK17),* 2017, March 13-17

3. "Are we driving blind-folded? A longitudinal study of learning design, engagement, and dropouts", *the 38th Annual CALRG conference*, 2017, June 13-15

4. "A longitudinal study on 38 learning designs within and between disciplines", *the 17th Biennial EARLI (EARLI17)*, 2017, Aug 29 – Sep 3

5. "Three perspectives on why you need learning analytics in educational research" (workshop co-organizer), *the 17th Biennial EARLI-JURE (JURE17),* 2017, Aug 26 –28

6. "NCRM Autumn School – New Data Horizon", Southampton, 2017.

## ACADEMIC SERVICES

**Reviewer:** IEEE Transactions on Learning Technologies, Journal of Computer Assisted Learning, Journal of Learning Analytics, Learning Analytics & Knowledge (LAK) conference, Assessment in Higher Education

**Guest Panel:** LAK20 doctoral consortium, EARLI-JURE 2017

**Committee member**, Computer &Learning Research Group (CALRG), Open University

**Social media chair,** 8th Learning Analytics & Knowledge conference (LAK18)

## PROFRESSIONAL MEMBERSHIPS

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|---|---|
| 2020 – now | Michigan Institute for Data Science (MIDAS), University of Michigan |
| 2019 – now | American Educational Research Association (AERA) |
| 2017 - now | Society of Learning Analytics Research (SoLAR) |
| 2017 | European Association for Research on Learning and Instruction (EARLI) |