DR. SEBASTIAAN DE KLERK

PERSONAL DETAILS

Sebastiaan de Klerk
Born on July 17th, 1986 in Haarlem, The Netherlands; Male; Dutch nationality

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SUMMARY

My name is Sebastiaan de Klerk. I studied psychology at the University of Amsterdam. During my bachelor I focused on industrial psychology, which I continued to do in my research master. The research master also had a strong focus on research and statistics. For my master thesis, I studied the influence of high-power group collaboration on group members' individual negotiation style and individual factors.

In 2016, I finished a four-year PhD project at eX:plain and the University of Twente. My supervisors were prof. Eggen and prof. Veldkamp. I focused on the efficiency and effectiveness of multimedia-based performance assessment as a replacement of performance assessment in vocational education. Besides building such innovative assessments, I also worked on the psychometric modeling of the data flowing out of the assessment.

Currently, I work as a senior researcher and data scientist at eX:plain, an educational assessment institution. My work revolves around building and studying innovative assessment solutions. I am used to working with complex data structures, and many statistical and psychometric techniques, for which I use R. I have special interest in innovative assessment types, detection of test fraud, and parallel assessments.

I am an analytical, and detail-oriented person. I have good communication skills, and love to work in teams and lead them. I am a disciplined worker who likes to work on deadlines. Development, both personally and technically, is important to me. I like to work on challenging problems, that require creativity and perseverance. When I am not working, I like to go cycling, fishing, and enjoy the outdoors in general. I am married and I have a two-year-old daughter.

HARD SKILLS

Research	Innovation	Data Science
Psychometrics/statistics	R	RStudio
R Shiny	GitHub	Microsoft Office

SOFT SKILLS

Analytical	Communication	Problem-solving
Time management	Teamwork	Leadership
Willingness to learn	Creativity	Feedback

LANGUAGES

	Speaking	Reading	Writing
English	Fluent	Fluent	Fluent
Dutch	Native	Native	Native

CAREER

2018 – **2020** *Senior researcher and data scientist at eX:plain [current position]*

2017 – **2020** *Treasurer in the Board of the Dutch Association for Educational Assessment [current position]*

2016 – **2018** *Researcher and data scientist at eX:plain*

2011 – **2016** *PhD Student at eX:plain and the University of Twente*

EDUCATION

2011 – **2016** *PhD in Educational Measurement* (University of Twente)

2008 - 2010 *Master of Science by Research in Psychology* (University of Amsterdam)

2005 - 2008 *Bachelor of Science in Psychology* (University of Amsterdam)

1998 - 2004 *High school (VWO)*

COURSES

DataCamp – *Supervised Learning in R: Classification*

DataCamp – *Building Web Applications with Shiny in R*

DataCamp – *Introduction to the Tidyverse*

University of Utrecht Summer School – *Statistical Programming with R*

AWARDS

The Innovation in Assessment Award – Public (2017). *Awarded by the Dutch Association for Educational Assessment.*

The Best Product Demo Award (2017). *Awarded by the European Association for Test Publishers.*

The Kathleen Tattersall New Assessment Researcher Award (2016). *Awarded by the European Association for Educational Assessment.*

PUBLICATIONS

De Klerk, S., van Noord, S., & van Ommering, C. J. (2019). The Theory and Practice of Educational Data Forensics. In *Theoretical and Practical Advances in Computer-based Educational Measurement* (pp. 381-399). Springer, Cham.

Van Ommering, C. J., de Klerk, S., & Veldkamp, B. P. (2018). Getting to grips with exam fraud: a qualitative study towards developing an evidence based educational data forensics protocol. In *International Conference on Technology Enhanced Assessment* (pp. 199-218). Springer, Cham.

De Klerk, S., Veldkamp, B. P., & Eggen, T. J. (2018). The design, development, and validation of a multimedia-based performance assessment for credentialing confined space guards. *Behaviormetrika*, *45*(2), 565-596.

De Klerk, S., Veldkamp, B. P., & Eggen, T. J. (2018). A framework for designing and developing multimedia-based performance assessment in vocational education. *Educational technology research and development*, *66*(1), 147-171.

Van Buuren, N., de Klerk, S., & Veldkamp, B. P. (2017). Bayesian Networks in Educational Assessment: Book review. *Psychometrika*, *82*(4), 1182-1184.

Kato, P. M., & de Klerk, S. (2017). Serious games for assessment: welcome to the jungle. *Journal of Applied Testing Technology*, *18*(S1), 1-6.

De Klerk, S., & Kato, P. M. (2017). The Future Value of Serious Games for Assessment: Where Do We Go Now?. *Journal of Applied Testing Technology*, *18*(S1), 32-37.

De Klerk, S. (2016). *Multimedia-based performance assessment in Dutch vocational education*. Published doctoral dissertation. University of Twente: Enschede.

De Klerk, S., Veldkamp, B.P., & Eggen, T.J.H.M. (2016). A methodology for applying students' interactive task performance scores from a multimedia-based performance assessment in a Bayesian network. *Computers in Human Behavior, 60*, 264-279.

De Klerk, S., Veldkamp, B.P., & Eggen, T.J.H.M. (2015). Psychometric analysis of the performance data of simulation-based assessment: A systematic review and a Bayesian network example. *Computers & Education*, 85, 23-34.

De Klerk, S., Veldkamp, B.P., & Eggen, T.J.H.M. (2015). The psychometric evaluation of a summative multimedia-based performance assessment. In E. Ras and D. Joosten-Ten Brinke (Eds.). *Computer Assisted Assessment. Research into E-Assessment* (pp. 1-11). Springer International Publishing.

De Klerk, S., van Dijk, P., & van den Berg, L. (2015). Voordelen en uitdagingen voor toetsing in computersimulaties (*Advantages and challenges for assessment in computer-based simulations*). *Examens*, *11*(2), 11-17.

De Klerk, S., Eggen, T.J.H.M., & Veldkamp, B.P. (2014). A blending of computer-based assessment and performance-based assessment: Multimedia-based Performance Assessment (MBPA). The introduction of a new method of assessment in Dutch Vocational Education and Training (VET). *CADMO, 22*(1), 39-56.

De Klerk, S. (2012). An overview of innovative computer-based testing. in T.J.H.M. Eggen and B.P. Veldkamp (Eds.). *Psychometrics in Practice at RCEC*, Enschede: RCEC, pp. 137-150.

CONFERENCE CONTRIBUTIONS, PRESENTATIONS, AND LECTURES

De Klerk, S. (2012, March). *The introduction of multimedia-based performance assessment in Dutch vocational education.* Presentation at the Foundation Cooperation for Safety quality assurance committee, Breda, the Netherlands.

De Klerk, S. (2012, July). *The introduction of multimedia-based performance assessment in Dutch vocational education.* Presentation at eX:plain working visit at Employment Technologies Corporation, Winter Park, FL.

De Klerk, S., Boonman, K., & Wagemakers, W. (2012, October). *The Foundation Cooperation for Safety opts for computer-based assessment.* Interview given for *VCA Actueel*, Breda, the Netherlands.

De Klerk, S., & Boonman, K. (2012, October). *Innovative test items in computer-based testing.* Presentation at conference of the Safety, Health and Environment Checklist Contractors, Rotterdam, the Netherlands.

De Klerk, S., & Van den Berg, L. (2013, April). *The future of performance-based assessment.* Presentation at the eX:plain performance-based assessment rater's day, Amersfoort, the Netherlands.

De Klerk, S., & Kloppenburg, M. (2013, May). *Two day introductory course on assessment and psychometrics.* Course given at eX:plain, Amersfoort, the Netherlands.

De Klerk, S. (2013, May). *The use of multimedia in assessment.* Presentation at the Dutch council for trainers and educators, Utrecht, the Netherlands.

De Klerk, S., Veldkamp, B.P., & Van Dijk, P. (2013, May and June). *Qualitative assessment during work placement: Pitfalls and opportunities.* Presentation at the conference of the Dutch Vocational Education Service Institution, Utrecht, the Netherlands.

De Klerk, S. Veldkamp, B.P., & Eggen, T.J.H.M. (2013, June). *A framework for designing and developing multimedia-based performance assessment.* Poster presented at the conference of the Dutch Interuniversity Graduate School of Psychometrics and Sociometrics, Groningen, the Netherlands.

De Klerk, S., Veldkamp, B.P., & Eggen, T.J.H.M. (2013, October). *A framework for designing and developing multimedia-based performance assessment.* Paper presented at the conference of the International Association for Educational Assessment, Tel Aviv, Israel.

De Klerk, S. (2013, November). *Multimedia-based performance assessment.* Experimental workshop given at the conference of the Dutch Association for Assessment, Nunspeet, the Netherlands.

De Klerk, S., & Van Dijk, P. (2014, June). *Challenges and solutions for performance-based assessment: The use of a multimedia-based performance assessment for credentialing confined space guards.* Presentation at the conference of OnTrac, Ede, the Netherlands.

De Klerk, S., & Veldkamp, B.P. (2014, October). *Assessment: Cycle of testing and innovations in testing* (Lecture, Educational assessment, Pre-master Educational Science and Technology), University of Twente, Enschede, the Netherlands.

De Klerk, S., Veldkamp, B.P., & Eggen, T.J.H.M. (2014, November). *Psychometric analysis of the performance data of simulation-based assessment: A systematic review and a Bayesian network example.* Paper presented at the conference of the European Association for Educational Assessment, Tallinn, Estonia.

De Klerk, S., Veldkamp, B.P., & Eggen, T.J.H.M. (2014, November). *Psychometric analysis of the performance data of simulation-based assessment: A systematic review and a Bayesian network example.* Paper presented at the conference of the Research Center for Examinations and Certification, Enschede, the Netherlands.

De Klerk, S. (2014, November). *A summative multimedia-based performance assessment for credentialing confined space guards.* Presentation at a working visit of the Dutch Association for Assessment, Rotterdam, the Netherlands.

De Klerk, S., Veldkamp, B.P., & Eggen, T.J.H.M. (2015, June). *The psychometric evaluation of a summative multimedia-based performance assessment for credentialing confined space guards.* Paper presented at the Computer Assisted Assessment conference. Zeist, the Netherlands.

De Klerk, S., Veldkamp, B.P., & Eggen, T.J.H.M. (2015, November). *The design, development, and validation of a multimedia-based performance assessment for credentialing confined space guards.* Paper presented at the conference of the European Association for Educational Assessment, Glasgow, Scotland.

De Klerk, S. (2016, March). *Educational assessment: multimedia-based performance assessment in vocational education* (Lecture, Educational assessment, Master Educational Science and Technology), University of Twente, Enschede, the Netherlands.

De Klerk, S. (2016, May). *Multimedia-based performance assessment and Bayesian networks.* Paper presented at the Onderwijs Research Dagen, Erasmus University, Rotterdam, the Netherlands.

De Klerk, S. (2016, October). *A web application for the statistical detection of test fraud.* Poster presented at the Conference on Test Security, Cedar Rapids, IA, USA.

De Klerk, S. (2016, November). *Multimedia-based performance assessment*. Keynote presentation at the conference of the European Assocation for Educational Assessment, Limasol, Cyprus.

De Klerk, S. (2016, November). *Multimedia-based performance assessment and Bayesian networks*. Paper presented at the conference of the European Assocation for Educational Assessment, Limasol, Cyprus.

De Klerk, S. (2017, September). *Cheating and the prevention and detection of test fraud* (Lecture, Educational assessment, Master Educational Science and Technology), University of Twente, Enschede, the Netherlands.

De Klerk, S. (2017, September). *An IT application for detecting test fraud.* Presentation at the conference of the European Assocation for Test Publishers, Noordwijk, the Netherlands.

De Klerk, S. (2017, November). *Educational data forensics*. Presentation at the conference of the Dutch Association for Educational Assessment, Nunspeet, the Netherlands.

De Klerk, S. (2018, June). *Educational data forensics*. Presentation at the Onderwijs Research Dagen, Radboud University, Nijmegen, the Netherlands.

De Klerk, S. (2018, September). *The educational data forensics improvement cycle*. Poster presented at the conference of the European Assocation for Test Publishers, Athens, Greece.

De Klerk, S. (2018, October). *Educational data forensics*. Presentation at the Conference on Test Security, Park City, UT, USA.

De Klerk, S. (2018, October). *The educational data forensics improvement cycle*. Poster presented at the Conference on Test Security, Park City, UT, USA.

De Klerk, S. (2018, June). *Goed en eerlijk toetsen*. Presentation at the Medilex conference, Utrecht, the Netherlands.

De Klerk, S. (2019, May). *Cheating and the prevention and detection of test fraud* (Lecture, Educational assessment, Master Educational Science and Technology), University of Twente, Enschede, the Netherlands.

De Klerk, S. (2019, September). *Educational data forensics*. Paper presented at the conference of the European Assocation for Test Publishers, Madrid, Spain.

De Klerk, S. (2019, October). *Using Guttman sequencing to detect test fraud.* Presentation at the Conference on Test Security, Miami, FL, USA.

De Klerk, S. (2019, October). *The educational data forensics protocol*. Paper presented at the Conference on Test Security, Miami, FL, USA.

De Klerk, S. (2020, January). *De preventie en detectie van examenfraude* (Lecture, Educational assessment, Master Educational Assessment), Fontys Hogeschool, Tilburg.