Curriculum Vitae

Daniël Karavolos

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Personal Information

Name:	Daniël Karavolos
Address:	Van der Hoopstraat 99-2
Postal Code	1051 VD
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E-mail:	kdkaravolos@gmail.com
Date of birth	23 maart 1988 (31 jaar)
Website	`www.danielkaravolos.nl`
Languages	Native: Dutch,
	Fluent: English, Python, C#
	Has been a while: Java, C++
Hobbies	Photography, historical fencing, theatre, gaming, guitar, gym.

Education

12/2015 - 12/2019	PhD: 'Orchestrating the Generation of Game Facets via a Model of Gameplay'
	Institute of Digital Games, University of Malta
	Supervisors: Georgios Yannakis, Antonios Liapis
9/2010 - 8/2013	Master of Science Artificial Intelligence, track: gaming
	Universiteit van Amsterdam
9/2006 - 4/2010	Bachelor of Science Artificial Intelligence,
	Rijksuniveriteit Groningen
	Predicate: pass with honour (avg. grade 7.5 or higher, thesis 8 or higher)
9/2000 - 6/2006	Gymnasium, Dr. Nassau College, Assen
	Profile: Nature & Health

Recent experience

As a lecturer at the University of Applied Sciences Amsterdam, I taught courses of the game development track of the ICT study program. I was involved at all levels of the program, teaching OOP, game AI, game design and agile development, as well as advanced courses like game design research and I supervised internships and a graduate project (the results of which were published at an international conference). Part of my job involved research into an experimental game design-tool that generates content based on transformational grammars, which was a collaboration with TU Delft and resulted in my first publication. This research inspired me to pursue a PhD.

For my dissertation I have researched how a computer can inform a designer about the effects of design choices and how the computer can automatically generate content based on gameplay goals set by a designer. For this I applied deep learning and evolutionary algorithms to game simulations in two

first-person shooters that I created in Unity (using existing assets). Until now this research has led to 7 peer-reviewed publications which are listed below and on my Google Scholar profile.

I have combined the last phase of my PhD (writing the dissertation) with a lecturing position at the school of Communication and Multimedia Design at the University of Applied Sciences Groningen. There I used my knowledge of game-related research to teach research-related courses (e.g., on user testing) of the major Game Design and to supervise several graduate projects and internships.

Experience

12/2015 - now	PhD candidate Procedural Content Generation, University of Malta, *research into the use of deep learning to create surrogate models for gameplay prediction in evolutionary game content generation algorithms. Giving lectures and workshops on AI and Computational Creativity for the MSc in Digital Games.*
2/2019 - 8/2019	Lecturer Game Design Research, Hanzehogeschool Groningen, *teaching courses related to design research for the study program Communication and Multimedia Design, gaming track. Supervision of internships and graduates.*
9/2013 - 11/2015	Lecturer Game Development and researcher (project Automated Game Design), University of Applied Sciences Amsterdam. *research into procedural content generation based on transformational grammars teaching courses in e.g. AI, OOP, game design, physics, PCG, and research skills*
9/2011 - 6/2012	Tutor first years Artificial Intelligence, Universiteit van Amsterdam, *supporting students with their study, and teaching them academic skills, assisting in the courses Introduction to Artificial Intelligence, Introduction to Logic, and Web Programming*
3/2010 - 6/2010	Student Assistent eyetracking research, Rijksuniversiteit Groningen, *data analysis of an eyetracking experiment in R.*
2/2010 - 9/2010	Student Assistent game design DoMUS, Rijksuniversiteit Groningen, *writing of the designdocument and the prototype for a serious game called DoMUS.*
4/2009 - 6/2010	Student Assistant Artificial Intelligence 1, Rijksuniversiteit Groningen, *giving practical sessions and grading of assignments concerning search algorithms.*
2/2009 - 4/2010	Student Assistant Scientific Skills, Rijksuniversiteit Groningen, *assisting students in finding literature, giving presentations, and writing a scientific article, giving classes, coordinating the team of student assistents*

Other activities

6/2012 - 6/2013	Treasurer of Studententoneelvereniging Amsterdam *running a student theatre club of approx. 200 members, and 13 theatre productions,* *and having the responsibility for a budget of approx. one hundred thousand euros.*
6/2011 - 6/2012	Coordinator games section Deadline.nl, *coordinating the games section of the cultural website Deadline.nl* *supporting other writers of the games section*
2/2011 - 6/2012	Editor Deadline.nl, *editing reviews and other articles of Deadline.nl*
5/2007 - 6/2012	Redactor Deadline.nl, *Writing reviews about movies, concerts, games, expositions, theatrical performances* *and other cultural activities.*
10/2008 - 10/2009	Member of the Board of Advisors of study association Cover, *advising the board of the study association concerning their policy*
2/2008 - 2/2009	Secretary/vice-chairman of the symposiumcommittee of study association Cover, *various tasks concerning the organisation of the symposium 'Dynamic Gaming',* *e.g. creating/filling the schedule, communication with the speakers and participants,* *and promoting the event.*
9/2007 - 10/2008	Boardmember (secretary) of study association Cover, *running the study association, tasks included maintaining the member administration,* *writing the notes of meetings, and communication with members,committees, and sponsors.*
11/2006 - 9/2010	Member of various committees of study association Cover, *various tasks as general member, secretary, or chairman of the photo committee,* *first years committee, sponsor committee, travelcommittee (2x), and* *study activity committee.*

Publications

Daniel Karavolos, Antonios Liapis and Georgios N. Yannakakis. "A Multi-Faceted Surrogate Model for Search-based Procedural Content Generation". In *IEEE Transactions on Games*, 2019.

Antonios Liapis, Daniel Karavolos, Konstantinos Makantasis, Konstantinos Sfikas and Georgios N. Yannakakis. "Fusing Level and Ruleset Features for Multimodal Learning of Gameplay Outcomes". In *Proceedings of the IEEE Conference on Game*s, 2019.

Daniel Karavolos, Antonios Liapis and Georgios N. Yannakakis: "Pairing Character Classes in a Deathmatch Shooter Game via a Deep-Learning Surrogate Model" in *Proceedings of the FDG workshop on Procedural Content Generation in Games*, 2018.

Daniel Karavolos, Antonios Liapis and Georgios N. Yannakakis: "Using a Surrogate Model of Gameplay for Automated Level Design" in *Proceedings of the IEEE Conference on Computational Intelligence and Games (CIG)*, 2018.

Daniel Karavolos, Antonios Liapis and Georgios N. Yannakakis: "Learning the Patterns of Balance in a Multi-Player Shooter Game" in *Proceedings of the FDG workshop on Procedural Content Generation in Games*, 2017.

Daniel Karavolos, Antonios Liapis and Georgios N. Yannakakis: "Evolving Missions to Create Game Spaces" in *Proceedings of the IEEE Conference on Computational Intelligence and Games (CIG)*, 2016.

Daniel Karavolos, Antonios Liapis and Georgios N. Yannakakis: "Mission Evolution for Dungeon Levels" in *Proceedings of the IEEE Conference on Computational Intelligence and Games (CIG)*. 2016.

Benjamin Van Arkel, Daniel Karavolos and Anders Bouwer: "Procedural generation of collaborative puzzle-platform game levels" in *Proceedings of the 16th International Conference on AI and Simulation in Games (GAMEON' 2015)*, 2015.

Daniel Karavolos, Anders Bouwer and Rafael Bidarra: "Mixed-Initiative Design of Game Levels: Integrating Mission and Space into Level Generation" in *Proceedings of the 10th International Conference on the Foundations of Digital Games (FDG)*, 2015.