

# Curriculum Vitae Matthias Moulin

## Personalia

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Name:	Moulin	First name:	Matthias
Address:	[REDACTED]	Postcode:	BE - 1851
City:	Humbeek (Belgium)	Nationality:	Belgian
Birthdate:	15 January 1992	Birthplace:	Vilvoorde (Belgium)
Mobile:	[REDACTED]	Email:	[REDACTED]
Driving license:	Car (B)	Hobbies:	Running, saxophone, gaming, game design, programming
LinkedIn	<a href="http://be.linkedin.com/pub/matthias-moulin/8b/a49/a23">http://be.linkedin.com/pub/matthias-moulin/8b/a49/a23</a>		

## Education

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2015 -	Gemeentelijke Academie Wemmel, Wemmel (Belgium) Deeltijds Kunstonderwijs - Studierichting: Muziek • <b>Major:</b> Electrical Guitar (Pop/Jazz)
2015 -	KULeuven, Leuven (Belgium) Doctor of Philosophy in Engineering (Computer Science) • <b>Subject:</b> Reduction of stochastic noise in physically-based rendering algorithms by adaptive sampling and frequency analysis <b>Promotor:</b> prof. dr. ir. Philip Dutré <b>Assessors:</b> prof. dr. ir. Daan Huybrechts & prof. dr. ir. Giovanni Samaey
2013 - 2015	KULeuven, Leuven (Belgium) Master of Science in Engineering (Computer Science) - <b>Magna cum laude</b> (84.46%) • <b>Major:</b> Human Computer Interaction (Computer Graphics) • <b>Thesis:</b> Hybrid kd-trees for photon mapping and accelerating ray tracing (18.5/20) <b>Paper:</b> Efficient visibility heuristics for kd-trees using the RTSAH (published) <b>Promotor:</b> prof. dr. ir. Philip Dutré
2010 - 2013	KULeuven, Leuven (Belgium) Bachelor of Science in Engineering - <b>Magna cum laude</b> (76.83%) • <b>Major:</b> Computer Science • <b>Minor:</b> Business Management Electrical Engineering
2004 - 2010	Sint-Theresiacollege, Kapelle-op-den-Bos (Belgium) Algemeen Secundair Onderwijs (ASO) - (84.1%) • <b>Major:</b> Science-Mathematics
2000 - 2010	Gemeentelijke Academie Grimbergen, Grimbergen (Belgium) Deeltijds Kunstonderwijs - Studierichting: Muziek - <b>Magna cum laude</b> (81.6%) • <b>Major:</b> Alto Saxophone (Classical Music)

## Experience

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Oct 2015 -	KULeuven, Leuven (Belgium) PhD Researcher
Aug 2010	Caterpillar Logistics Inc., Grimbergen (Belgium) Worker at shipping (student job)

## Languages

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Dutch	Mother tongue
English	Fluent speaker and writer
French	Moderate speaker and writer

## Skills

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Programming languages	C++, C#, C, Python, CUDA, Java, Erlang, Prolog, Scheme, Racket, Haskell, Elm, Matlab, Maple
Modelling languages	UML, OCL
Tools	Unity3D, LaTeX, Git, SVN, Windows family, Office family, Visual Studio, Eclipse IDE, Enthought Canopy IDE

## Publications

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Moulin M.	Hybrid kd-trees for photon mapping and accelerating ray tracing Master's thesis, Department of Computer Science, KULeuven, Belgium, June 2015.
Moulin M., Billen N., Dutré P.	Efficient Visibility Heuristics for kd-trees Using the RTSAH <i>In Proceedings of Eurographics Symposium on Rendering - Experimental Ideas &amp; Implementations</i> (June 2015), 31-39.

## Teaching

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2015 - 2016	KULeuven, Leuven (Belgium) Problem Solving and Engineering Design: Computer Science (B-KUL-H01Q3C) <ul style="list-style-type: none"><li>• <b>Program:</b> Bachelor of Science in Engineering &amp; Bachelor of Science in Informatics</li><li>• <b>Staff:</b> prof. dr. ir. Hendrik Blockeel, prof. dr. ir. Erik Duval, prof. dr. ir. Dirk Nuyens</li><li>• <b>Teaching assistants:</b> dr. Sam Corveleyn, Roel Matthysen, ir. Matthias Moulin, Micol Ferranti, Juan Alvarado</li></ul>
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## Thesis students

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2015 - 2017	KULeuven, Leuven (Belgium) Sus Verwimp - Approximated Geometry for Efficient Visibility Calculations <ul style="list-style-type: none"><li>• <b>Program:</b> Master of Applied Informatics</li><li>• <b>Promotor:</b> prof. dr. ir. Philip Dutré</li><li>• <b>Mentors:</b> ir. Niels Billen, ir. Matthias Moulin</li></ul>
2015 - 2016	KULeuven, Leuven (Belgium) Jeroen Sanders - Nearest Neighbor Ray Tracing <ul style="list-style-type: none"><li>• <b>Program:</b> Master of Science in Engineering (Computer Science)</li><li>• <b>Promotor:</b> prof. dr. ir. Philip Dutré</li><li>• <b>Mentors:</b> ir. Niels Billen, ir. Matthias Moulin</li></ul>

## Past projects

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2048	A fault-resistant, concurrent version of the popular game 2048 ( <i>written in Erlang</i> )
Fingerprint compression	Fingerprint Compression using wavelet packets ( <i>written in Python</i> )

FrigoShare	An Android app and Google App Engine backend for sharing food leftovers ( <i>written in Java</i> )
Hybrid Survivor	A hybrid game using Unity3D and the Oculus Rift ( <i>written in JavaScript, C#</i> )
Incisor segmentation	A model-based procedure capable of segmenting the incisors in panoramic dental radiographs using an Active Shape Model (ASM) ( <i>written in Python</i> )
JUnit Test Deamon	Automatic test deamon extension of the Junit Framework ( <i>written in Java</i> )
Lillyhammer Rendering Engine	A ray tracing engine written from scratch, capable of rendering .obj scenes with several kinds of effects (reflection, refraction, ...) by using a variety of acceleration data structures (BVH, kd-trees, regular grid, ...) ( <i>written in Java</i> )
MazeStormer	A robot powered by LEGO NXT ( <i>written in Java</i> )
Tron	Adaption of the Tron game ( <i>written in Elm</i> )