



# Curriculum Vitae ir. Matthias Moulin

## Personalia

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Nationality: Belgian Birthdate: 15 January 1992  
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 Github <https://github.com/matt77hias> - <https://matt77hias.github.io/>

## Experience *(in reverse chronological order)*

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Jun 2020 - Present [Frostbite](#), [EA Digital Illusions CE AB](#) (DICE), Stockholm (Sweden)  
Rendering Software Engineer II – Image Quality (Frostbite Rendering)  
• **Technologies:** DRS, Expression Shader pipelines, GI Material, Shader Graph pipelines

Feb 2019 - Jun 2020 [Frostbite](#), [EA Digital Illusions CE AB](#) (DICE), Stockholm (Sweden)  
Rendering Software Engineer I – Image Quality (Frostbite Rendering)  
• **Technologies:** CPU/GPU Probes, Enlighten, Flux, GI Live Preview, PBR Materials

Oct 2016 - Feb 2019 [Department of Computer Science, KU Leuven](#), Leuven (Belgium)  
Rendering Research Engineer – [Research Foundation - Flanders](#) (FWO)  
• **Fellowship:** PhD Fellowship fundamental research

Oct 2015 - Sep 2016 [Department of Computer Science, KU Leuven](#), Leuven (Belgium)  
Rendering Research Engineer – [Computer Graphics Research Group \(KU Leuven\)](#)

## Education *(in reverse chronological order)*

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2013 - 2015 [KU Leuven](#), Leuven (Belgium)  
Master of Science in Engineering (Computer Science) — **Magna cum laude** (84.46%)  
• **Major:** Human Computer Interaction (Computer Graphics)  
• **Thesis:** Hybrid Kd-trees for Photon Mapping and Accelerating Ray Tracing (18.5/20)  
**Supervisor:** prof. dr. ir. Philip Dutré

2010 - 2013 [KU Leuven](#), Leuven (Belgium)  
Bachelor of Science in Engineering — **Magna cum laude** (76.83%)  
• **Major:** Computer Science  
• **Minors:** Electrical Engineering and Business Management

## Publications *(in reverse chronological order)*

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**MOULIN M.**, DUTRÉ P.: [On the use of Local Ray Termination for Efficiently Constructing Qualitative BSPs, BIHs and \(S\)BVHs](#), *The Visual Computer*, Volume 35, Issue 12, pp. 1809–1826, December 2019 (First online: July 2018).

**MOULIN M.**: [Hybrid Kd-trees for Photon Mapping and Accelerating Ray Tracing](#), *Master's thesis*, Department of Computer Science, KU Leuven, Belgium, June 2015.

**MOULIN M.**, BILLEN N., DUTRÉ P.: [Efficient Visibility Heuristics for Kd-Trees Using the RTSAH](#), In *Eurographics Symposium on Rendering - Experimental Ideas & Implementations* (June 2015), Lehtinen J., Nowrouzezahrai D., (Eds.), The Eurographics Association, pp. 31–39.

## Skills

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Frameworks	D3D11, D3D12, DXGI, (EA)STL, MPI, OpenCV, OpenGL, OpenMP
Markup languages	HTML/CSS, Markdeep, Markdown, TeX/LaTeX
Modelling languages	OCL, UML
Programming languages	C (89/90, 99, 11/18, 23), C++ (98/03, 11/14, 17, 20, 23), C#, CUDA C/C++, Erlang, Haskell, J#, Java, JavaScript/TypeScript, Maple, Matlab/Octave, MIPS, Prolog, Python 2/3, Racket
Shading languages	GLSL, HLSL
Version control	Git, Mercurial, Perforce, SVN



## Game credits and contributions *(in reverse chronological order)*

Developer(s)	Game	Publisher	Release Date
<a href="#">BioWare</a>	<a href="#">Dragon Age: Dreadwolf</a>	<a href="#">Electronic Arts</a>	<i>Announced</i>
<a href="#">Full Circle</a>	<a href="#">Skate</a>	<a href="#">Electronic Arts</a>	<i>Announced</i>
<a href="#">EA Vancouver</a>	<a href="#">EA Sports UFC 5</a>	<a href="#">Electronic Arts</a>	October 2023
<a href="#">EA Vancouver</a>	<a href="#">NHL 24</a>	<a href="#">Electronic Arts</a>	October 2023
<a href="#">EA Vancouver</a> , <a href="#">EA Romania</a>	<a href="#">EA Sports FC 24</a>	<a href="#">Electronic Arts</a>	September 2023
<a href="#">EA Tiburon</a>	<a href="#">Madden NFL 24</a>	<a href="#">Electronic Arts</a>	August 2023
<a href="#">EA Tiburon</a>	<a href="#">EA Sports PGA Tour</a>	<a href="#">Electronic Arts</a>	April 2023
<a href="#">Motive</a>	<a href="#">Dead Space</a>	<a href="#">Electronic Arts</a>	January 2023
<a href="#">Criterion Games</a>	<a href="#">Need for Speed Unbound</a>	<a href="#">Electronic Arts</a>	November 2022
<a href="#">EA Vancouver</a>	<a href="#">NHL 23</a>	<a href="#">Electronic Arts</a>	October 2022
<a href="#">EA Vancouver</a> , <a href="#">EA Romania</a>	<a href="#">FIFA 23</a>	<a href="#">Electronic Arts</a>	September 2022
<a href="#">EA Tiburon</a>	<a href="#">Madden NFL 23</a>	<a href="#">Electronic Arts</a>	August 2022
<a href="#">EA DICE</a> , <a href="#">Criterion Games</a> , <a href="#">EA Gothenburg</a> , <a href="#">Ripple Effect Studios</a>	<a href="#">Battlefield 2042</a>	<a href="#">Electronic Arts</a>	November 2021
<a href="#">EA Vancouver</a>	<a href="#">NHL 22</a>	<a href="#">Electronic Arts</a>	October 2021
<a href="#">EA Vancouver</a> , <a href="#">EA Romania</a>	<a href="#">FIFA 22</a>	<a href="#">Electronic Arts</a>	September 2021
<a href="#">EA Tiburon</a>	<a href="#">Madden NFL 22</a>	<a href="#">Electronic Arts</a>	August 2021
<a href="#">EA Vancouver</a> , <a href="#">EA Romania</a>	<a href="#">FIFA 21</a>	<a href="#">Electronic Arts</a>	October 2020
<a href="#">Motive</a>	<a href="#">Star Wars: Squadrons</a>	<a href="#">Electronic Arts</a>	October 2020
<a href="#">EA Tiburon</a>	<a href="#">Madden NFL 21</a>	<a href="#">Electronic Arts</a>	August 2020
<a href="#">Ghost Games</a> , <a href="#">Criterion Games</a>	<a href="#">Need for Speed Heat</a>	<a href="#">Electronic Arts</a>	November 2019
<a href="#">PopCap Games</a>	<a href="#">Plants vs. Zombies: Battle for Neighborville</a>	<a href="#">Electronic Arts</a>	October 2019
<a href="#">EA Vancouver</a> , <a href="#">EA Romania</a>	<a href="#">FIFA 20</a>	<a href="#">Electronic Arts</a>	September 2019
<a href="#">EA Tiburon</a>	<a href="#">Madden NFL 20</a>	<a href="#">Electronic Arts</a>	August 2019
<a href="#">EA DICE</a>	<a href="#">Battlefield V</a>	<a href="#">Electronic Arts</a>	November 2018 <i>(post-release)</i>
<a href="#">EA DICE</a>	<a href="#">Star Wars Battlefront II</a>	<a href="#">Electronic Arts</a>	November 2017 <i>(post-release)</i>

## Languages

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

## Past projects *(selected)*

 <a href="#">MAGE</a> v0	Rendering engine ( <i>C++17, D3D11, HLSL</i> )
 <a href="#">MAGE</a> v1 ( <i>WIP</i> )	Improved and extended remake built from the ground up ( <i>C++23, D3D12, HLSL</i> )

## Teaching assistantship

2016 - 2018	Computer Graphics: Project	<a href="#">[B-KUL-H07Z5A]</a>
2016 - 2017	Capita Selecta Computer Science: Man Machine Interface	<a href="#">[B-KUL-H05N2A]</a>
2016 - 2017	Problem Solving and Engineering Design, Part 3	<a href="#">[B-KUL-H01D4B]</a>
2015 - 2016	Problem Solving and Engineering Design: Computer Science	<a href="#">[B-KUL-H01Q3C]</a>