NIELS BILLEN
Research Engineer

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🌐 nielsbillen.github.io

Work Experience

Flanders Make
nov. 2017 — present

Research Engineer
At Flanders Make I am responsible for researching and implementing augmented and virtual reality techniques to support operators and process engineers in executing their job.

Education

KU Leuven
sep. 2013 — feb. 2018

PhD In Engineering Science: Computer Science
- **Topic:** Reducing the Noise in Illumination Algorithms
- **Promotor:** prof. dr. ir. Philip Dutré
- **Funding:** Institute agency for Innovation by Science and Technology (IWT)

KU Leuven
sep. 2011 — sep. 2013

Master of Science in Engineering — Cum Laude (76,17%)
- **Major**: Human-Computer Interaction
- **Minor**: Secure software
- **Thesis**: Stochastic Visibility in Rendering Algorithms using the Occlusion Map

KU Leuven
sep. 2008 — sep. 2011

Bachelor of Science in Engineering — Cum Laude (69,74%)
- **Major**: Computer Science
- **Minor**: Electrical Engineering

Skills

Programming Languages

In order of proficiency:
Java *(9 years)*, C++ *(5 years)*, HTML5-CSS-Javascript *(3 years)*, C# *(1 year)*, Bash, Python, Matlab

Operating Systems and Tools

Windows, Ubuntu, The Standard Widget Toolkit (SWT), SVN, Git, Mercurial, Eclipse, Visual Studio (Code), Unity3D, Latex, Word, PowerPoint

Languages

Dutch: native language
English: fluent (speaking, reading, writing)
French: basic

PUBLICATIONS

Computer Grapics Forum

July 2017

Computer Grapics Forum

July 2016

CW Report

July 2015

Computer Grapics Forum

July 2015

Computer Grapics Forum

July 2014

Computer Grapics Forum

July 2013

Temporal Coherence for Metropolis Light Transport
Joran Van de Woestijne, Roald Frederickx, Niels Billen and Philip Dutré
Eurographics Symposium on Rendering - Experimental Ideas & Implementations

Line Sampling for Direct Illumination
Niels Billen and Philip Dutré
Proceedings of the 27th Eurographics Symposium on Rendering

Visibility Acceleration using Efficient Visibility Classification
Niels Billen and Philip Dutré
CW Report 695

Efficient Visibility Heuristics for Kd-trees using the RTSAH
Matthias Moulin, Niels Billen and Philip Dutré
Eurographics Symposium on Rendering - Experimental Ideas & Implementations

Probabilistic Visibility Evaluation using Geometry Proxies
Niels Billen, Ares Lagae and Philip Dutré
Proceedings of the 25th Eurographics Symposium on Rendering

Probabilistic Visibility Evaluation for Direct Illumination
Matthias Moulin, Niels Billen and Philip Dutré
Proceedings of the 24th Eurographics Symposium on Rendering

Past Projects and Hobbies

Music

I have been a drummer for the past 15 years. I received a formal education at the "Stedelijke Academie voor Kunsten Maaseik", where I also attended an optional six year course in composing.

Revision

A ray tracer, written from scratch, capable of rendering scenes with several kinds of effects (e.g. anti-aliasing, soft shadows, motion blur, depth of field ...).

GameBoy Emulator

A hobby project in which I am writing an emulator for the original Gameboy in Java. Currently, the BIOS can be emulated.

Silen

Extracurricular group project in which we wrote a cross platform music player written in Java using SWT and GStreamer.

References

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