

Mgr. Martin Šik

CONTACT INFORMATION

Šumberova 44
Praha 6
16200 Czech Republic

Phone: +420 775 148 825
E-mail: martin_sik.cz@centrum.cz
Web: cgg.mff.cuni.cz/~sik/

EDUCATION

Charles University in Prague - Faculty of Mathematics and Physics,
Prague, Czech Republic

Doctoral degree, Computer graphics and image analysis,
expected graduation date: September 2016

- Supervisor: Ing. Jaroslav Krivánek, Ph.D.
- Specialization: Algorithms for light transport simulation

Master's degree, Software systems, September 2012

- Graduated cum laude
- Excellence scholarships granted during the studies
- Specialization: Computer graphics
- Thesis topic: *Guide hair interpolation*
Analysis and implementation of a procedural hair generator, which communicates with Maya Stubble hair plugin and 3Delight renderer.

Bachelor's degree, Computer Science, September 2010

- Excellence scholarships granted during the studies
- Specialization: Programming
- Thesis topic: *Particle systems*
Analysis and implementation of particle systems library, which handles real-time interactions among particles and off-line simulation.

Gymnázium Nad Alejí Secondary Grammar School, Prague, Czech Republic

Graduation Exam, May 2007

PROFESSIONAL EXPERIENCE

Hewlett-Packard, Prague, Czech Republic

Software engineer, web developer **September 2008 - February 2012**

- Analysis and implementation of non-web/web applications using .NET, MSSQL and JavaScript.
- Creating web pages using XHTML and CSS.

Universal Production Partners, Prague, Czech Republic

Software engineer, **March 2012 - May 2013**
specialized at computer graphics

- Analysis and implementation of programs for movies post-production, visual effects, modeling and animating of 3D scenes.
- Programming in C++ for Microsoft Windows and Mac OS.

PROJECTS

Unifying Points, Beams, and Paths in Volumetric Light Transport Simulation, *Scientific paper, 2014*

I was part of a team responsible for development of a new light transport algorithm for scenes with participating media. The algorithm combines bidirectional path-tracing with various biased estimators using generalized multiple importance sampling. The paper was accepted to **SIGGRAPH 2014**.

On-line Learning of Parametric Mixture Models for Light Transport Simulation, *Scientific paper, 2014*

I was part of a team responsible for development of a new light transport algorithm.

The algorithm uses several photon passes to train radiance and importance distributions. These distributions are used for guiding light and eye paths during rendering. The algorithm greatly increases efficiency of existing algorithms, especially in scenes with hard visibility of light sources. The paper was accepted to **SIGGRAPH 2014**.

Fast Random Sampling of Triangular Meshes, *Scientific paper, 2013*

Upgraded version of the paper mentioned bellow. New fast random sampling algorithm is used for hair distribution and sampling of complex luminaire. Presented at **Pacific Graphics, Short Papers 2013**.

Fast Random Sampling of Triangular Meshes for Hair Modeling, *Scientific paper, 2012*

I have written a scientific paper about random sampling of triangular meshes for efficient hair modeling. The paper was accepted for presentation at **CESCG 2012** conference, where it received an award for the third best paper.

Stubble, *C++, 2011/2012*

I was part of a team responsible for development of a hair modeling plugin for Maya and 3Delight. The project was done in cooperation with **Universal Production Partners**. My role in the team was to create a procedural hair generator and connect our plugin with 3Delight renderer. I was also lead project designer.

OpenGUI, *C++, 2007*

I have developed GUI library for programs which use OpenGL for displaying purposes. The GUI created by this library can be set by program commands or from XML file. To test this library I have also implemented a simple XML editor.

COMPUTER SKILLS **Programming languages** C/C++, C.NET, VB.NET, Java, PHP, Pascal

Databases MySQL, MSSQL, Web XHTML, JavaScript, AJAX

Frameworks/Libraries Maya API, Photoshop API, 3ds Max API, RenderMan API, OpenGL, CUDA, QT, Embree

Operating systems GNU/Linux, Microsoft Windows, Mac OS

Development tools Visual Studio, NetBeans, QT creator, SVN

LANGUAGE SKILLS **English** advanced

German basic knowledge of the language

Czech native speaker

MISCELLANEOUS driving license category B

First Certificate in English (University of Cambridge ESOL Examinations)

PERSONAL QUALITIES Team player, exible, reliable, hard worker, open-minded.

HOBBIES Computer graphics, squash, fitness, jogging, movies, music and travelling.