

Monte Carlo Methods for Physically Based Volume Rendering



SIGGRAPH 2018 Courses

WEDNESDAY, 15 August 09:00 – 12:15 | Room 301 – 305

Fog & clouds

An aerial photograph of a dense forest during sunrise or sunset. The sun is low on the horizon, creating a strong backlighting effect that produces numerous golden sunbeams (crepuscular rays) streaming through the trees. A thick layer of fog or mist fills the valleys and lower parts of the forest, catching the light and creating a soft, ethereal atmosphere. The overall color palette is dominated by warm, golden-yellow and soft green tones.

Underwater



source: dailypictures.info

Surfaces and volumes



Wojciech Jarosz

Surface or volume?



source: Flickr

source: Studio Lernert & Sander





Avatar. Copyright © 2009 20th Century Fox



Arrival. Copyright © 2016 Paramount Pictures



Big Hero 6. Copyright © 2014 Walt Disney Enterprises, Inc.



Mortal Engines. Copyright © 2018 Universal Studios

Presenters

Jan Novák
(Disney Research)



Johannes Hanika
(KIT/Weta)



Wojciech Jarosz
(Dartmouth)



Iliyan Georgiev
(Solid Angle/Autodesk)



Jaroslav Křivánek
(Charles University/Chaos Group)



Syllabus

Fundamentals [10 minutes]

- *Jan Novák (Disney Research)*

Distance sampling [30 minutes]

- *Jan Novák (Disney Research)*

Transmittance estimation [25 minutes]

- *Wojciech Jarosz (Dartmouth College)*
- *Jan Novák (Disney Research)*

Syllabus

Building a light transport path [20 minutes]

- *Iliyan Georgiev (Solid Angle/Autodesk)*

Advanced methods [65 minutes]

- *Wojciech Jarosz (Dartmouth College)*
- *Jaroslav Křivánek (Charles University/Chaos)*
- *Johannes Hanika (KIT/Weta)*

Acceleration structures [15 minutes]

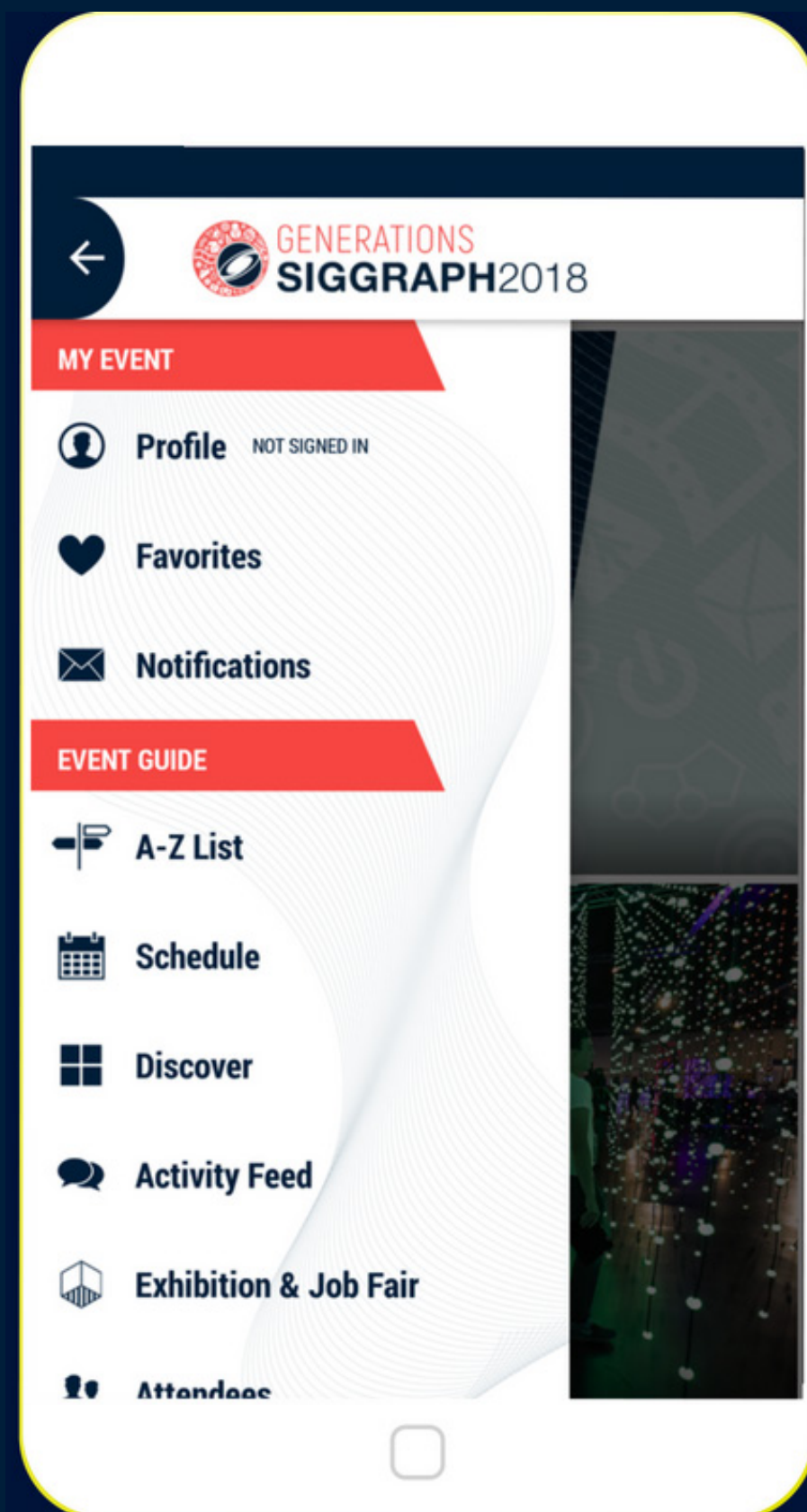
- *Johannes Hanika (KIT)*

Syllabus

Open problems & Conclusion [5 minutes]

- *Jaroslav Křivánek (Charles University/Chaos)*

Tell Us How We Did!



Complete the Survey

It's as easy as:

- Navigating to this session in the app
- Scrolling to the bottom of the screen
and...
- Answering less than 5 questions

ENJOY!