

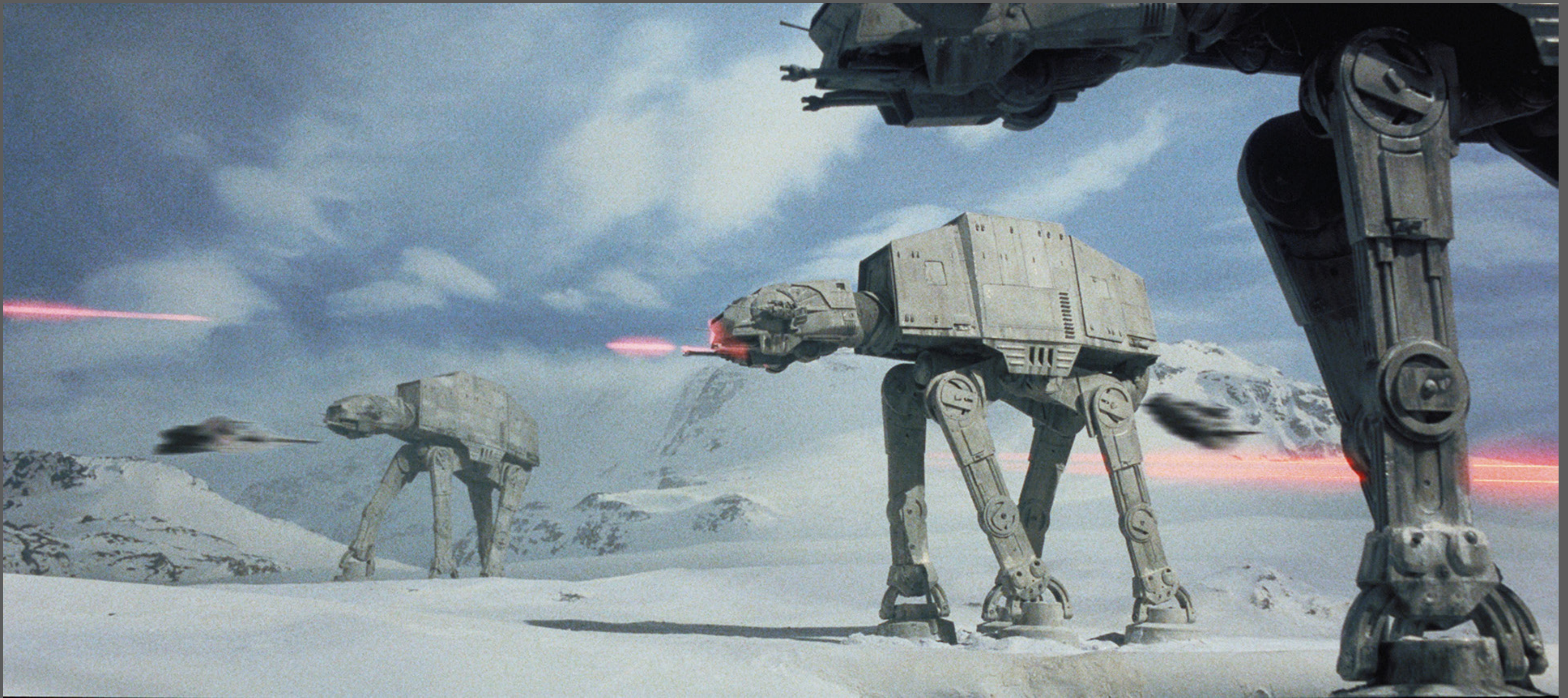


Forum
TERATEC **24**

Unlock the future

Achieving The Impossible with Visual Effects

*Christophe Bicchierai • Senior 3D Artist
Ranch Computing • CPU & GPU Renderfarm*



Star Wars Episode 5: The Empire Strikes Back / 1980 • ©Lucasfilm Ltd. & TM. All Rights Reserved.

Crowd Simulation



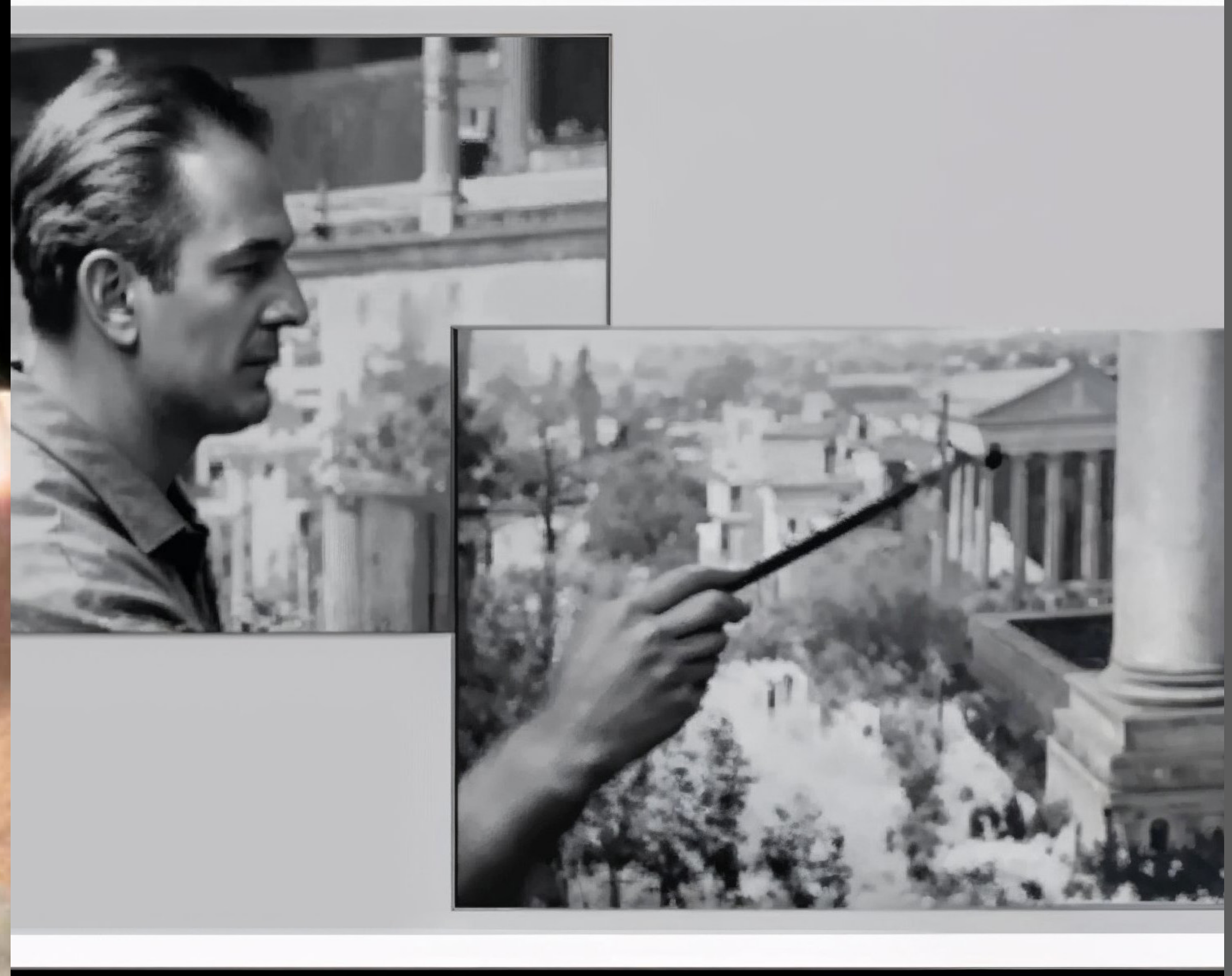
Ben Hur / 1956 • ©MGM Studios – All Rights Reserved

Crowd Simulation



Return of the Jedi / 1983 • ©Lucasfilm Ltd. & TM. All Rights Reserved.

Crowd Simulation

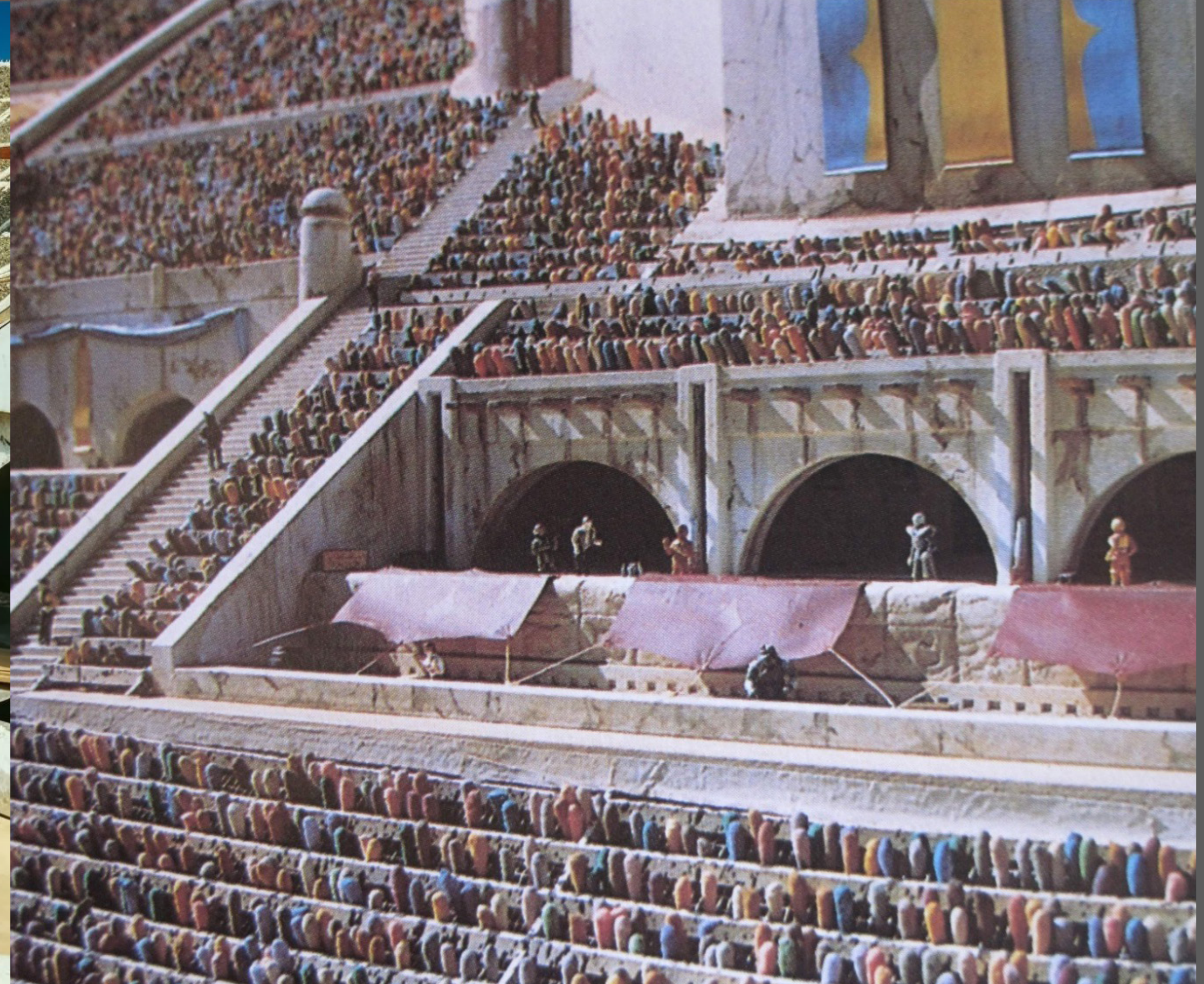


Crowd Simulation



The Phantom Menace / 1999 • ©Lucasfilm Ltd. & TM. All Rights Reserved

Crowd Simulation



Crowd Simulation



Crowd Simulation



Gladiator / 2000 • ©Dreamworks SKG – All Rights Reserved

Crowd Simulation

Roma 1090
Gladiator 1210
Middle 1440
Emperor 1615
Attack 1805

1032 F



Roma 1090
Gladiator 1210
Middle 1440
Emperor 1615
Attack 1805

1032 F



Roma 1001
Gladiator 1435
Middle 1675
Emperor 1890
Attack 2140

1032 F



Roma 1001
Gladiator 1435
Middle 1675
Emperor 1890
Attack 2140

1032 F



Crowd Simulation



Gladiator / 2000 • ©Dreamworks SKG – All Rights Reserved

Crowd Simulation



The Two Towers / 2002 • ©New Line Cinema – All Rights Reserved

Crowd Simulation



Crowd Simulation



Golaem

Fluids

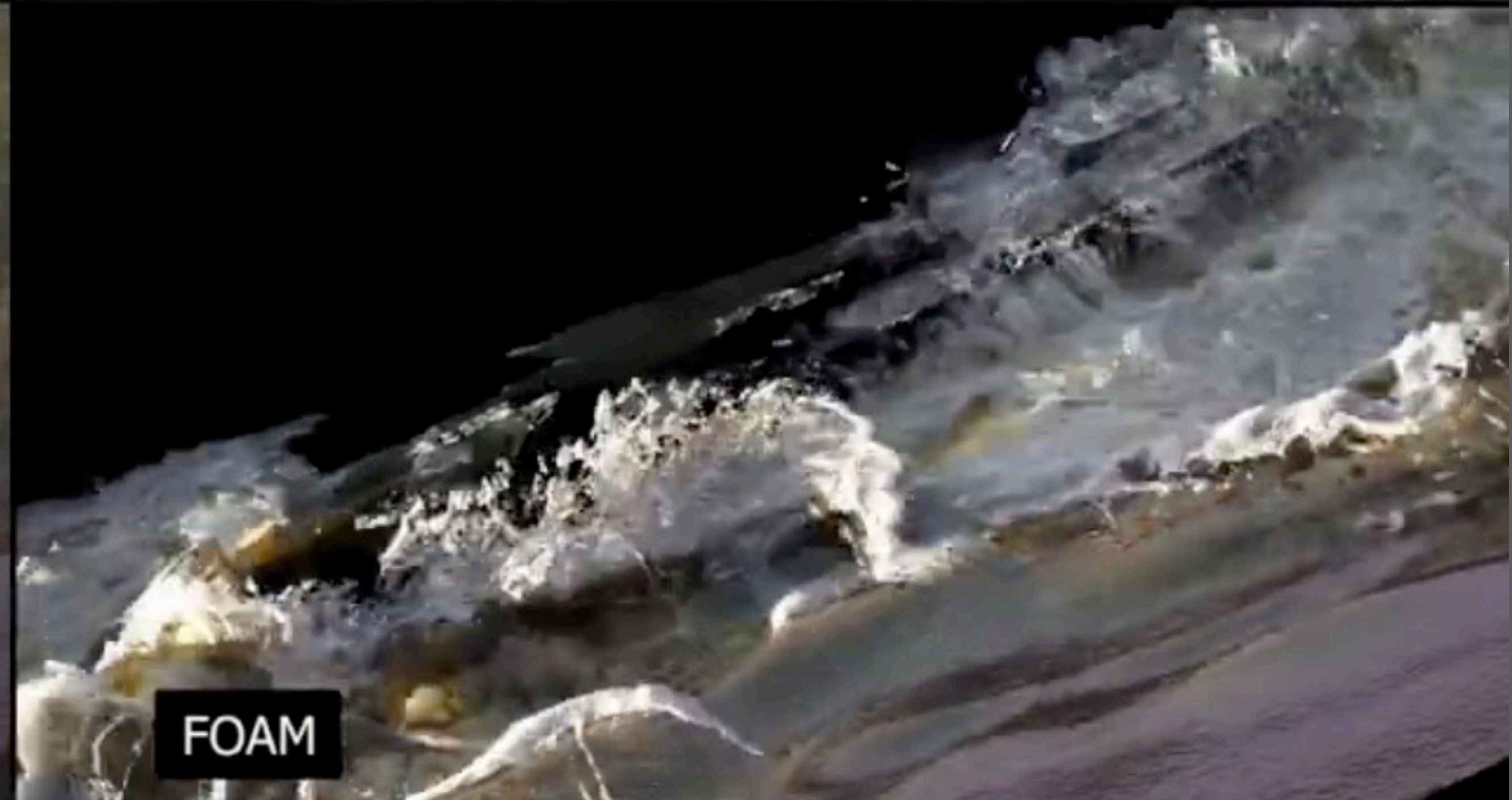
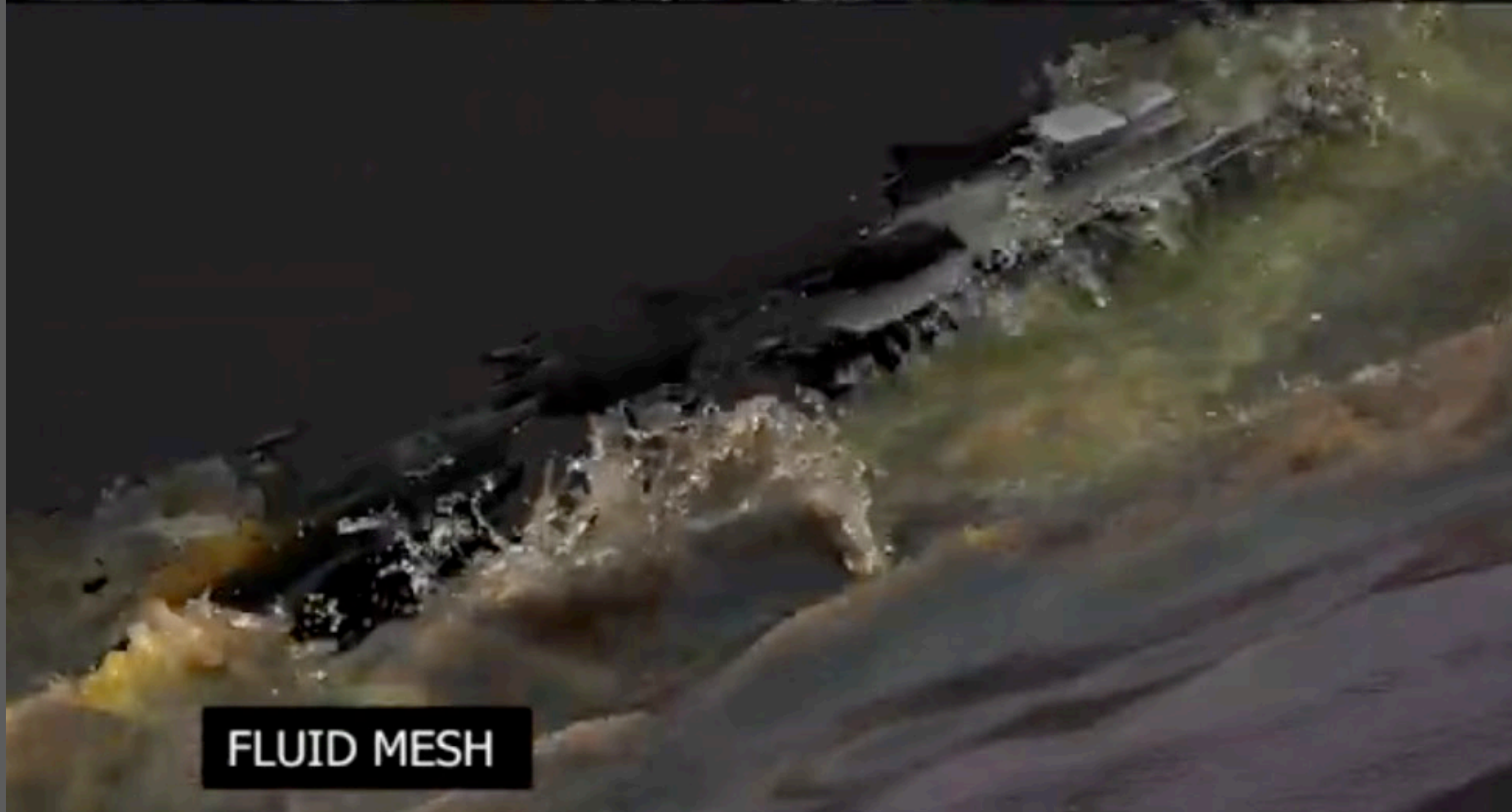


The Abyss / 1989 • ©20th Century Fox – All Rights Reserved



Avatar - The Way of Water / 2022 • ©Lightstorm Entertainment / 20th Century Studios – All Rights Reserved







Photogrammetry

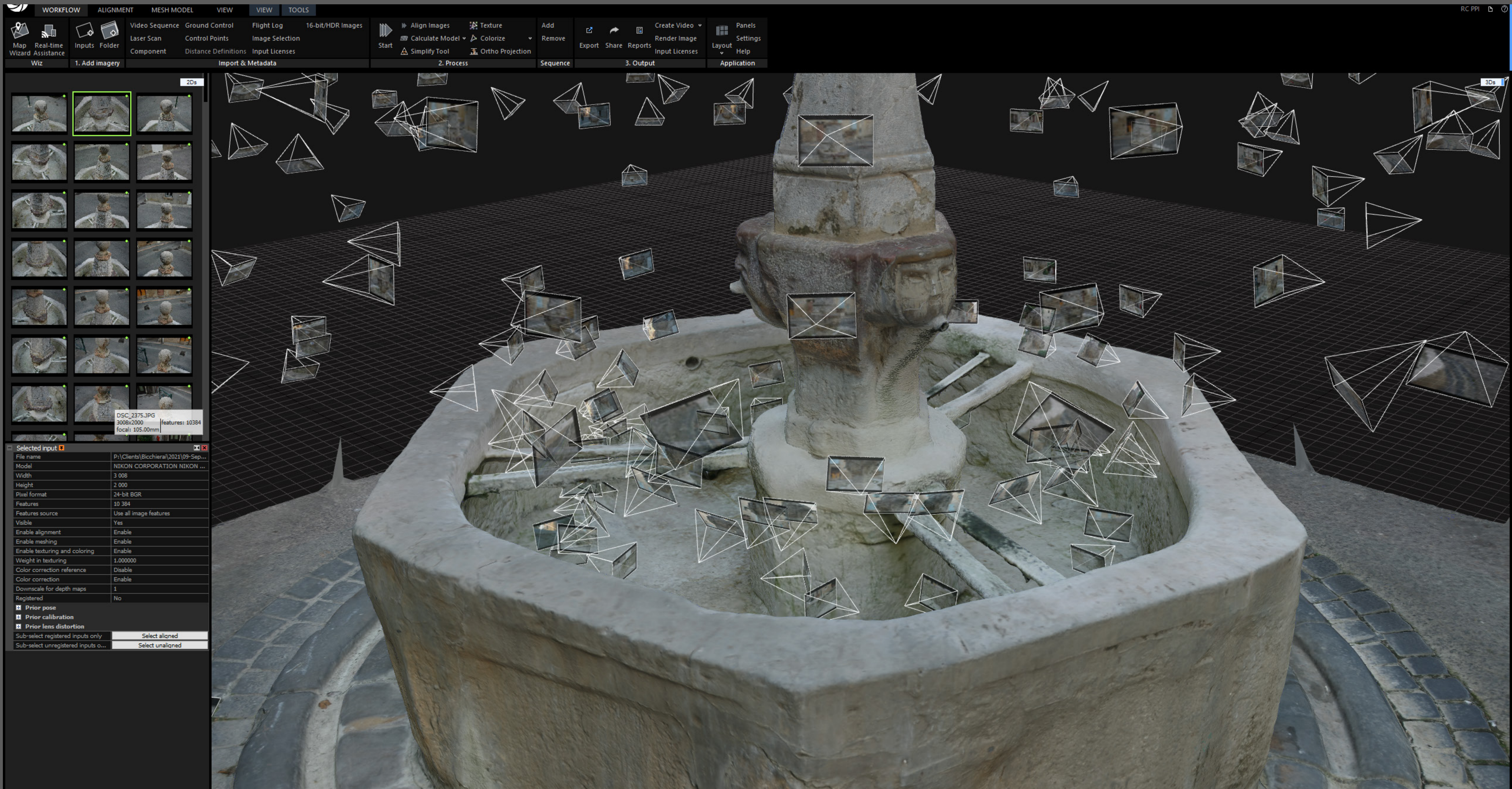


Photogrammetry



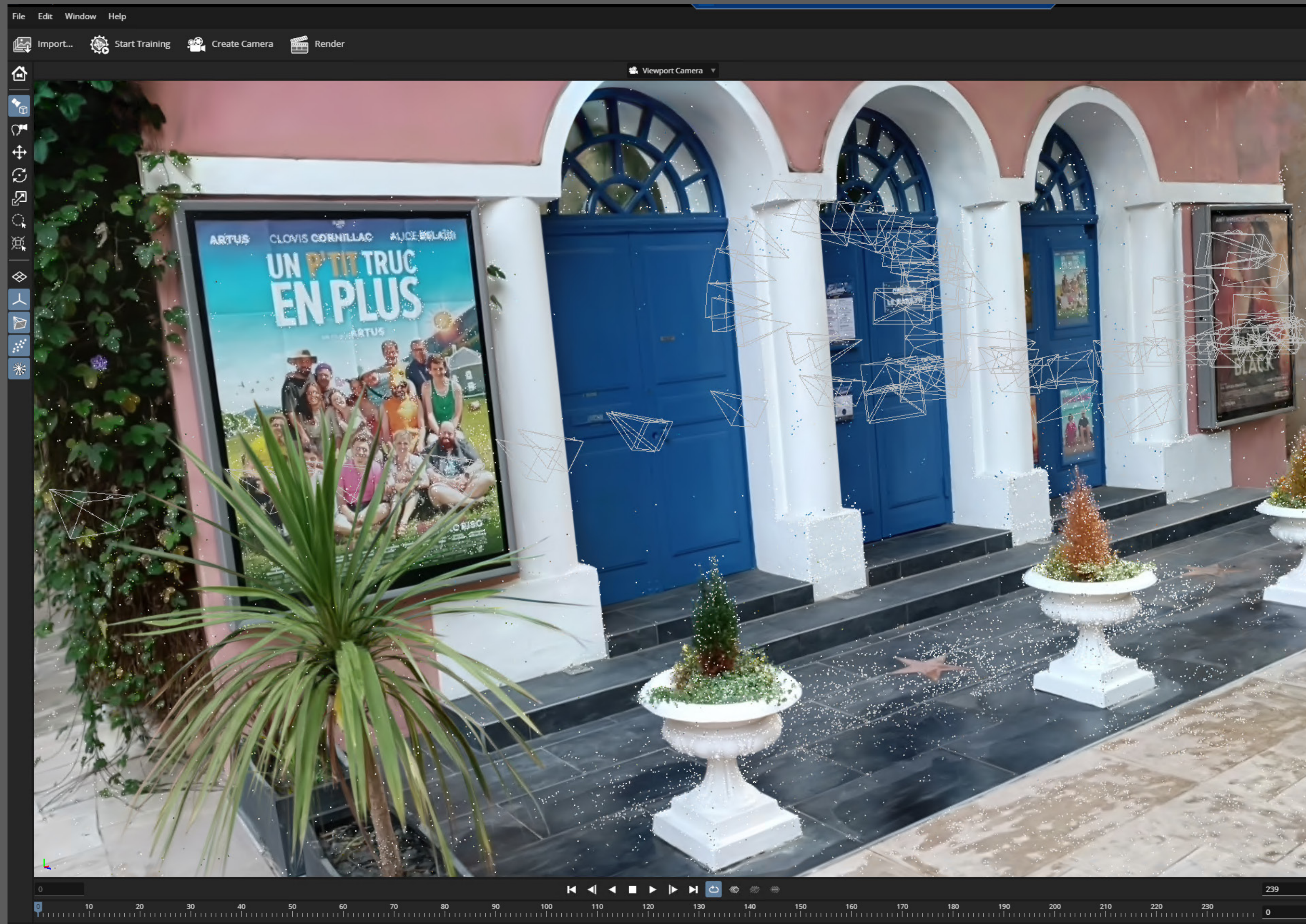


EISKO



Reality Capture

NeRF : Neural Radiance Fields



Jawset Postshot

Architecture: AI finishing



Architecture: AI finishing



but the big part is
Rendering



Toy Story / 1995 • ©Pixar Animation Studio – All Rights Reserved

A close-up shot of Woody from the movie Toy Story. He is wearing his signature brown cowboy hat, a red bandana, and a yellow and green plaid shirt. He has a surprised or shocked expression on his face, with wide eyes and an open mouth. In the background, there is a baby's nursery with a mobile hanging from the ceiling, a baby bottle, and a toy abacus. A white speech bubble with a black border and a dotted tail points to the left, containing the text "5 hours".

5 hours

Average render time per frame / Toy Story / 1995 • ©Pixar Animation Studio – All Rights Reserved

Rendering

Toy Story is a 80 minutes movie.
it needs 65 years of rendering

Rendering



«There are about a dozen great computer graphics people and Jim Blinn is six of them»

*Ivan Sutherland
Turing Price 1988*

Jim Blinn

Rendering



«As technology advances,
the rendering time
remains constant»

Jim Blinn

Rendering



The Indestructible 2 / 2018 • ©Pixar Animation Studio – All Rights Reserved

Rendering



Average render time per frame (hours) / The Indestructible 2 / 2018 • ©Pixar Animation Studio – All Rights Reserved

Rendering / ML / AI



16 hours
A.I. denoiser

Rendering / ML / AI



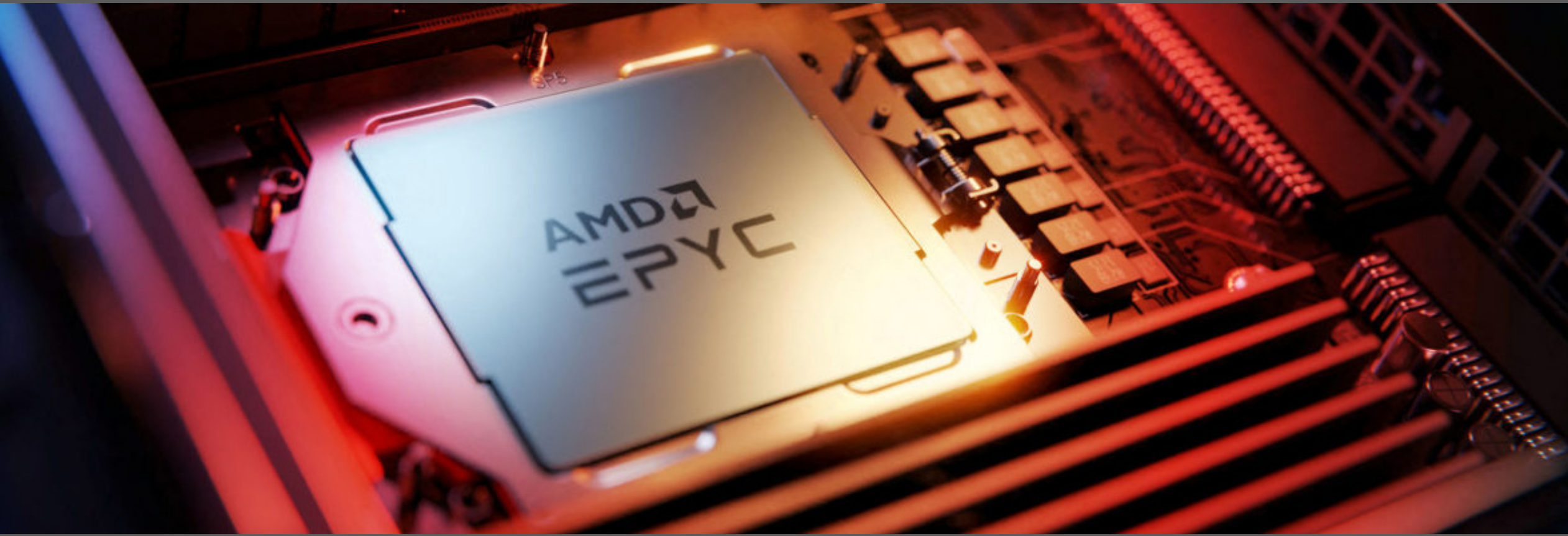
What is a renderfarm ?



We provide rendering services for
3D studios, architects and freelancers

Created in 2006 • Data Center located in Paris

Ranch's 50% IT / Dev
team 30% 3D Artist



Hardware

CPU: Dual AMD EPYC Milan-X | Genoa | Bergamo

RAM: 1Tb

NVMe: 8Tb

GPU: up to 8

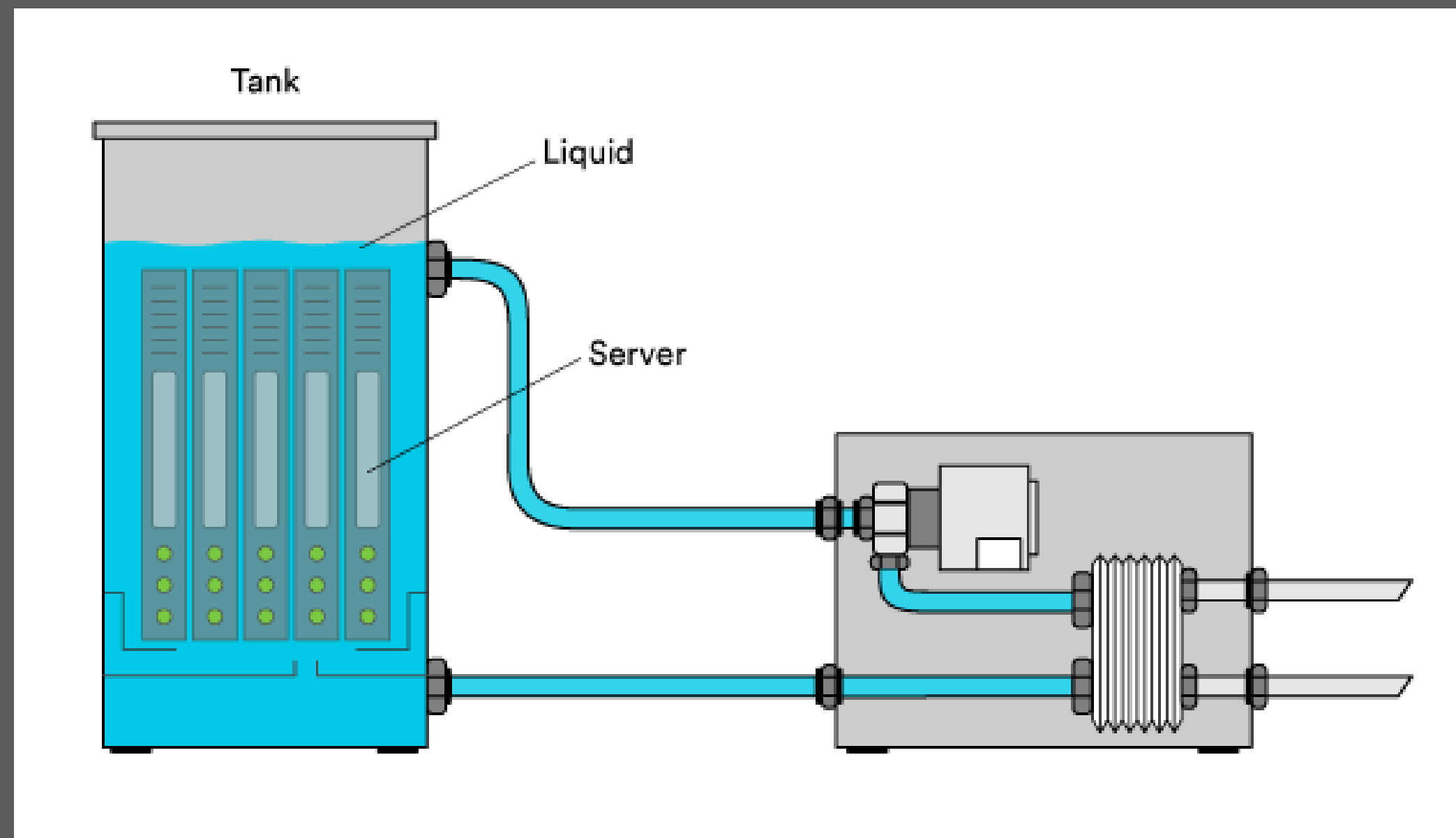
Network: Dual 25Gbit/s

Virtualization: OpenStack



Coming this year

Immersion





Thank you for
your attention

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