

DCGI

DEPARTMENT OF COMPUTER GRAPHICS AND INTERACTION

50 let počítačové grafiky v ČR

Jiří Žára

PROGRAM

■ ČVUT

- Doc. Bohuslav Hudec
- Ing. Josef Vogel
- Doc. Ježek

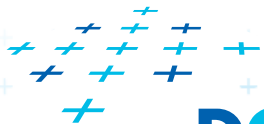
■ Plzeň

- Prof. Václav Skala

■ Brno

- Prof. Pavel Zemčík
- Prof. Jiří Sochor

Přestávka na
občerstvení
a povídání



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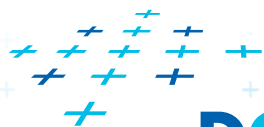
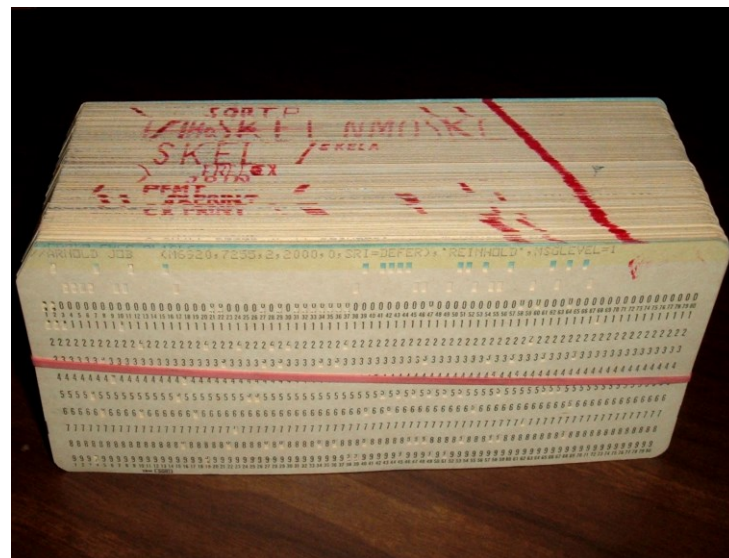
Poděkování

- Iniciátoři a organizátoři akce
- Prof. **Pavlu Slavíkovi**



Heroické výkony programátorů

- Sálové počítače
 - Čas obrátky (ladění) 1 den
- Programy
 - ZDROJOVÉ KÓDY:
Papírová média (1 štítek = 1 řádek)
 - VSTUPNÍ DATA: dtto
 - INTERAKCE: žádná
- Výstupy
 - Bubnová (znaková) tiskárna



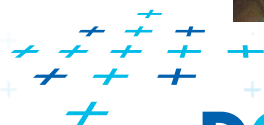
Dálnopis = oblíbený (a jediný) editor (sekvenční)



Viditelný obsah pásky
a vkládaných znaků

Výstupní
pásky

Vstupní
pásky



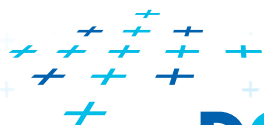
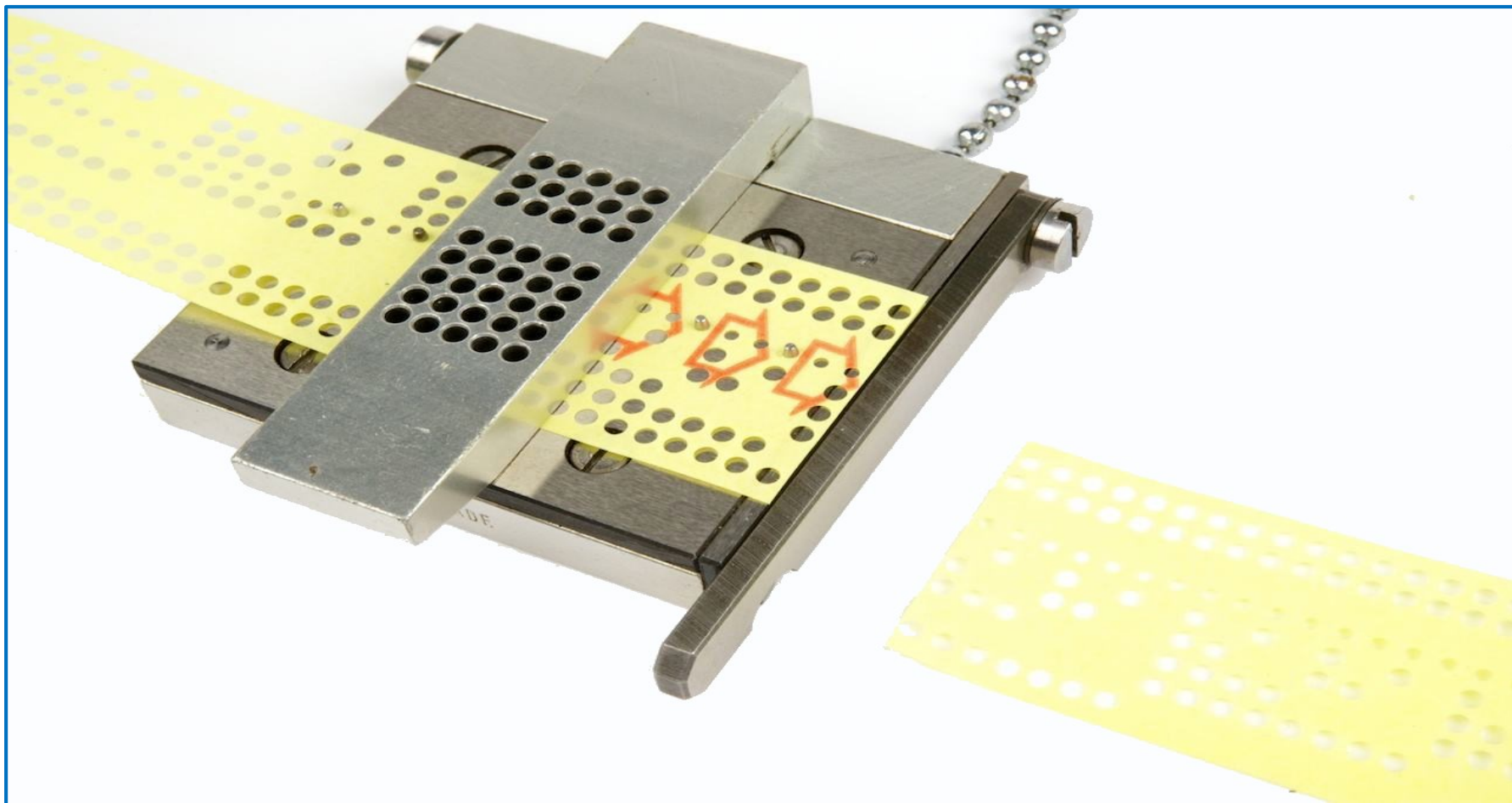
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(5)



Ruční editace textu na děrné pásce



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(6)

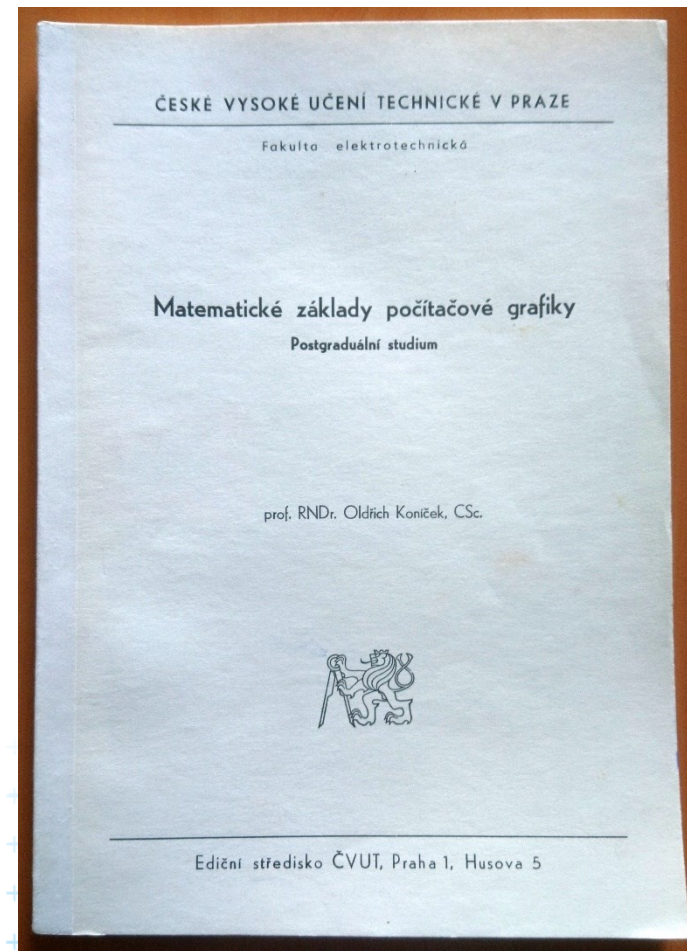


Odborná literatura?

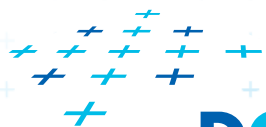
- Náhodné útržky ze světa
- Ruské překlady čehosi
- Vlastní texty/skripta



1985



1986



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(7)



J. Žára podobně jako Jára Cimrman...

- Objevil v roce 1988 princip **LOD**
 - Žára, J.: **Geometrický model s hierarchickou strukturou**
[Kandidátská disertační práce, ČVUT, 1988]
- který ovšem definoval J. H. Clark již v roce 1976
 - Clark, J. H.: **Hierarchical geometric models for visible surface algorithms**
[Communications of the ACM, October 1976]



Graphics and
Image Processing

Hierarchical Geometric Models for Visible Surface Algorithms

James H. Clark
University of California at Santa Cruz

The geometric structure inherent in the definition of the shapes of three-dimensional objects and environments is used not just to define their relative motion and placement, but also to assist in solving many other problems of systems for producing pictures by computer. By using an extension of traditional structure information, or a geometric hierarchy, five significant improvements to current techniques are possible. First, the range of complexity of an environment is greatly increased while the visible complexity of any given scene is kept within a fixed upper limit. Second, a meaningful way is provided to vary the amount of detail presented in a scene. Third, "clipping" becomes a very fast logarithmic search for the resolvable parts of the environment within the field of view. Fourth, frame to frame coherence and clipping define a graphical "working set," or fraction of the total structure that should be present in primary store for immediate access by the visible surface algorithm. Finally, the geometric structure suggests a recursive descent, visible surface algorithm in which the computation time potentially grows linearly with the visible complexity of the scene.

Key Words and Phrases: visible surface algorithms, hidden surface algorithms, hierarchical data structures, geometric models

CR Categories: 5.31, 8.2

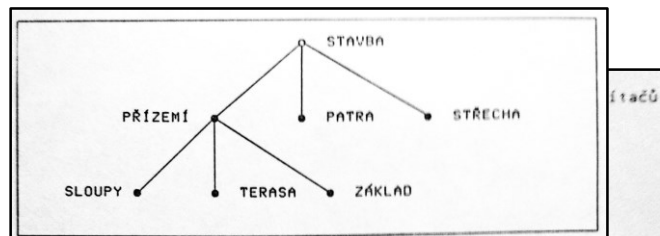
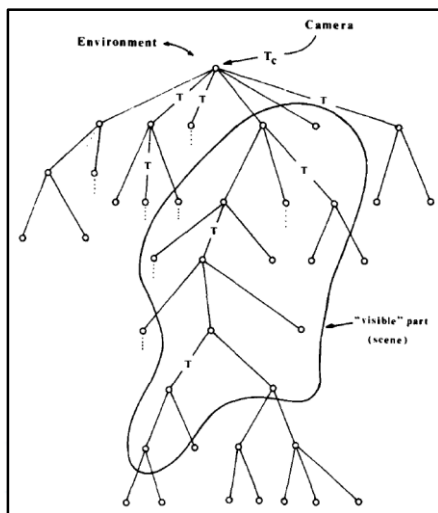
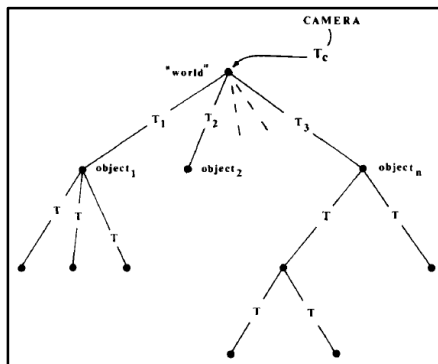
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A version of this paper was presented at SIGGRAPH 76: The Third Annual Conference on Computer Graphics, Interactive Techniques, and Image Processing, The Wharton School, University of Pennsylvania, July 14-16, 1976.

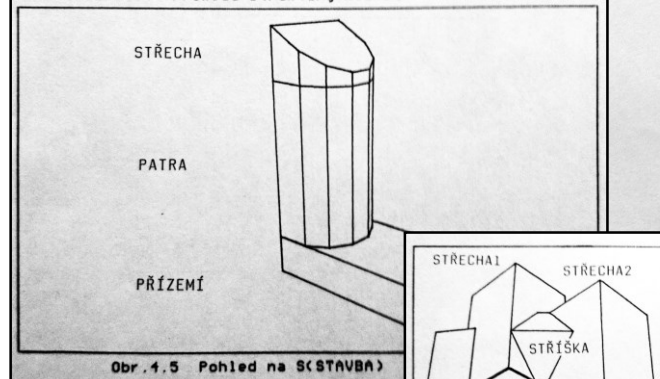
Author's address: Information Sciences, University of California, Santa Cruz, CA 95064.

Communications
of
the ACM

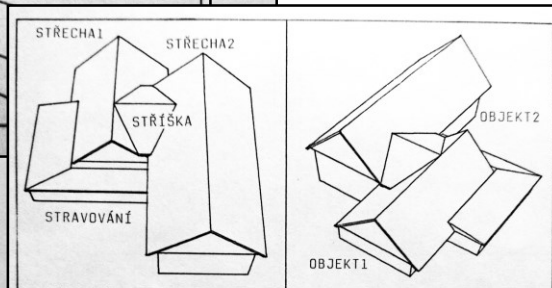
October 1976
Volume 19
Number 10



Obr. 4.4 Příklad struktury modelu



Obr. 4.5 Pohled na S(STAVBA)

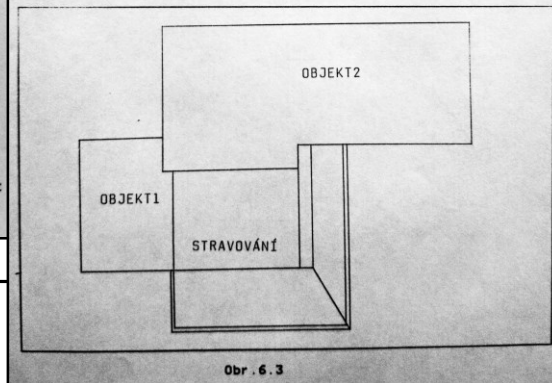


Obr. 6.1

Obr. 6.2

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Školitel :
Doc. Ing. Bohuslav Hudec, CSc



Obr. 6.3



Prostor pro pionéry Počítačové grafiky

