

Game Programming

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Introduction

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 - all materials / info. will be announced ASAP

Introduction

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- via

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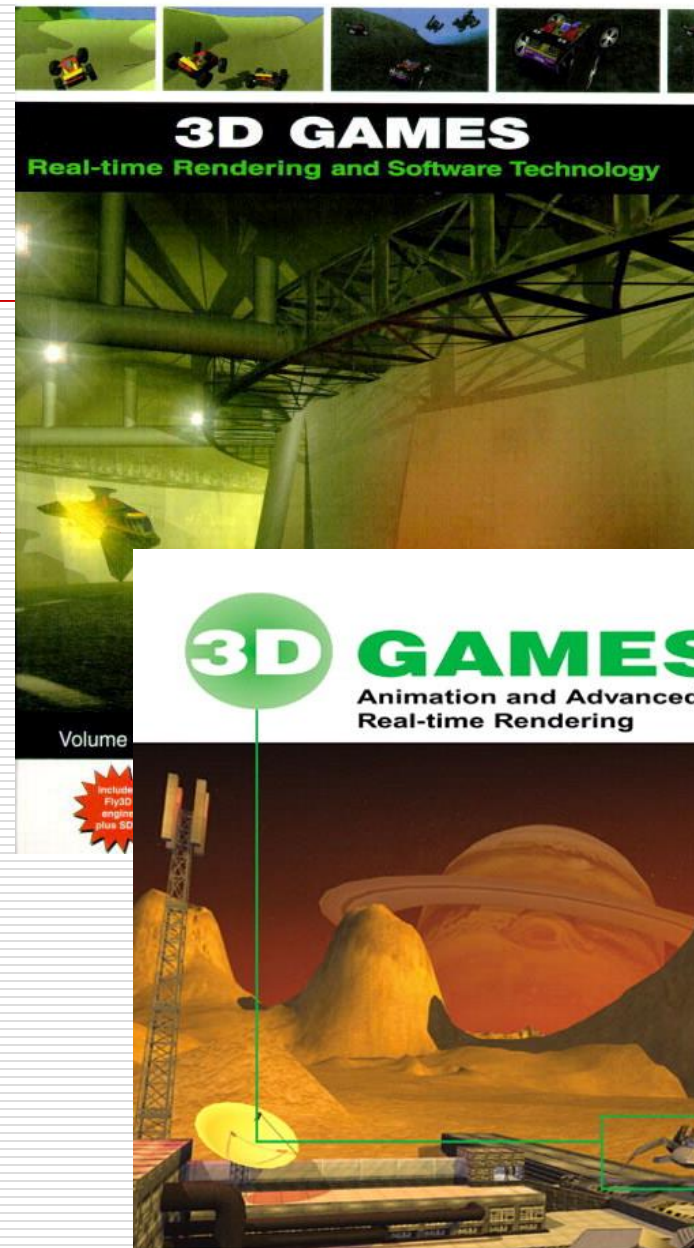
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Reference

- A. Watt and F. Policarpo. *3D Games: Volume 1&2: Real-time Rendering and Software Technology & Animation and Advanced Real-time Rendering*, Addison-Wesley, 2000&2003.



Alan Watt | Fabio Policarpo



 ADDISON-WESLEY

volume
two

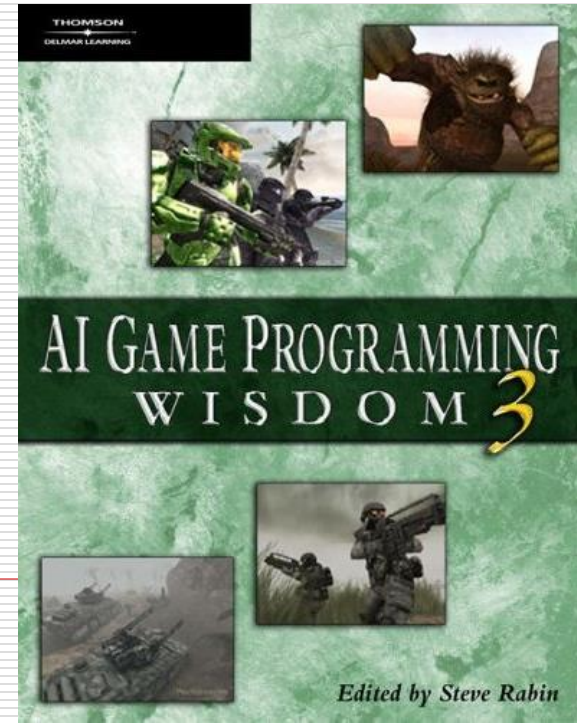
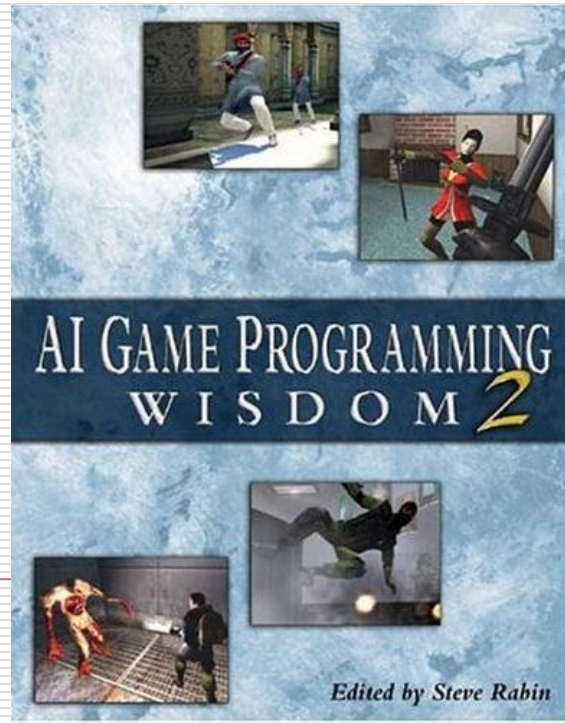
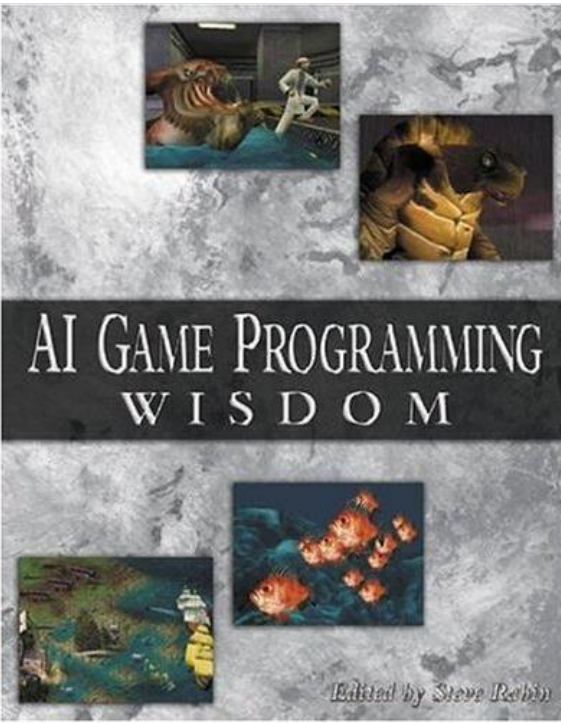
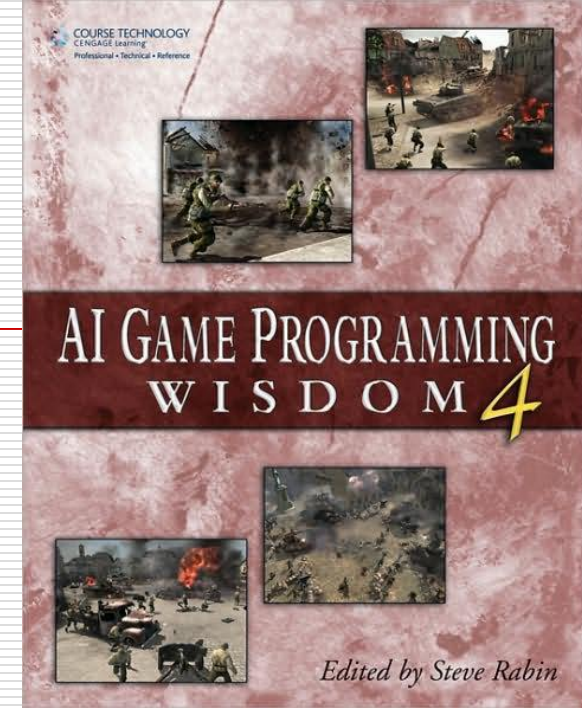
Reference

- M. DeLoura & D. Treglia & A. Kirmse & K. Pallister & M. Dickheiser & S. Jacobs. *(Best of) Game Programming Gems 1~8*, Charles River Media / Course Technology PTR, 2000~2010.



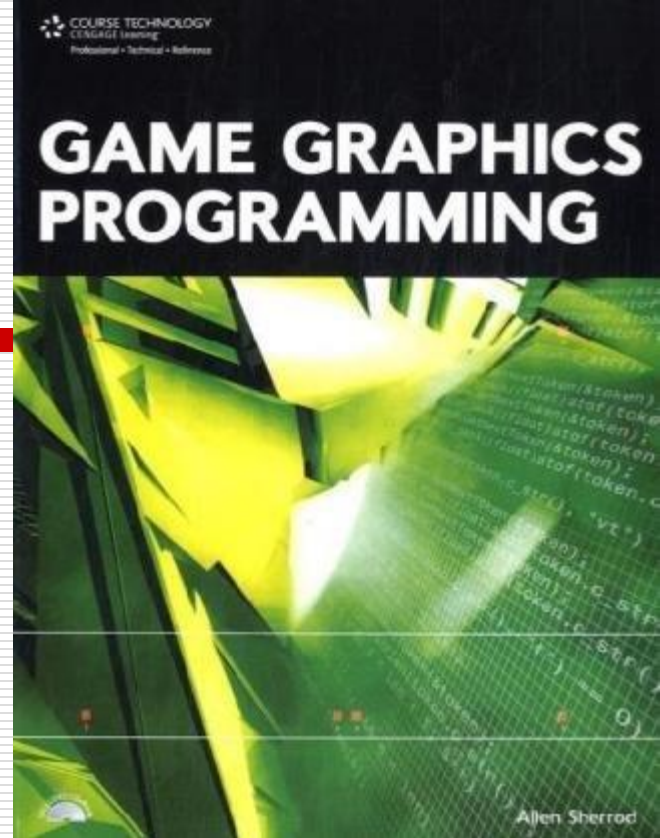
Reference

- S. Rabin.
AI Game Programming Wisdom 1~4, Charles River Media, 2002~2008.



Reference

- A. Sherrod.
Game Graphics Programming, Charles River Media, 2008.
- A. Watt and F. Policarpo.
Advanced Game Development with Programmable Graphics Hardware, A K Peters, 2005.



**Advanced Game Development
with Programmable Graphics Hardware**

Alan Watt
Fabio Policarpo

Pre-requirements

- C/C++
- Data Structure
- Algorithm
- Graphics
 - better to have

Requirements

- Participants
- Examination
 - maybe take home (one week)
- Program Assignments
 - will be closely coupled with final project
- Final Game Project

Final Game Project

- ❑ There are **3 or 4 assignments** which are closely coupled with this term project.
- ❑ **2 ~ 4 students** are in a team.
- ❑ Use TheFly3D 3D engine to code a real-time 3D game.
- ❑ We will provide graphics materials and setup the game design.
- ❑ *If you want to do alone or want to use your own materials or game engine, please come to discuss with us.*
 - Before the discussion, please prepare your idea, game (art) designs, and the scope of the game.

Syllabus (tentative)

- Introduction
- Game System Analysis
- Pipelining Rendering
- Game Mathematics
- 3D Game Engine Training
 - Program Assignment #1
- Game Control System
- Game Geometry
 - Program Assignment #2

Syllabus (tentative)

- Character Motion
- Scene Management
 - Program Assignment #3
- Game FX
- Game AI
 - Program Assignment #4 (perhaps)
- Game Physics (maybe)
- Final Game Project Demo
 - 1/5

Game Platform

- PC
 - Single player
 - Match Makings
 - MMOG (Massive Multi-player Online Game)
 - Web-based Games
- Console
 - Sony PS2 / PS3
 - Microsoft Xbox / Xbox 360
 - Nintendo GameCube / Wii
- Arcade
 - Coin up
- Mobile
 - Nintendo GBA
 - Nintendo DS
 - Sony PSP
 - Hand-held

Game Types

- RPG (Role playing games)
- AVG (Adventure games)
- RTS (Real-time strategy games)
- FPS (First-person shooting games)
- Sports
- Action
- Puzzle games
- Table games
- MMORPG
 - Massive Multiple Player Online Role Playing Games