Reverse engineering hardware, backing up ROMs, hardware emulation including use of JIT and dynamic recompilers, and emulation of retro video game systems

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IV Lossless compression of ROMS, including regular

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#### Part I

# Reverse engineering hardware

#### Part II

### Hardware emulation

#### Chapter 1

#### Emulation

#### 1.1 Low-level emulation

#### 1.1.1 Emulating memory

big array of bytes hex numbers of some length

#### 1.1.2 Emulating processors

emulation. cpu has operations. need to emulate them. convert to native. table with lookup for clock cycle requirements, mode etc.

#### 1.2 High-level emulation

#### 1.3 Containers

#### 1.4 Virtualisation

#### Part III

Backing up ROMS, including CD (bin/cue) and DVD (iso), and mounting them (can mount ISO with "mount", cdemu for CDs)

#### Part IV

## Lossless compression of ROMS, including regular zip, chd, gz, rvz

# Part V

## NES

# Part VI

# Game Boy

### Part VII

# Game Boy Advance

# Part VIII

## SNES

### Part IX

## **N64**

### $\mathbf{Part}~\mathbf{X}$

Arcade systems

### Part XI

# Sony consoles

### Part XII

Sega consoles

#### Part XIII

# Field-programmable gate array (FPGA)