

## **JAN SMÉKAL**

For song-'Take on me-AHA' were used following instruments: oboe, flute, clarinet, violin, acoustic guitar, orchestral harp, electric base, and piano. For synthesizing instruments were used following techniques-

### **Oboe**

FM synthesis with one modulator modulating sine wave.

### **Clarinet**

Formant synthesis with 4 band-pass filters excited by sawtooth wave.

### **Violin**

Formant synthesis with 8 band-pass filters excited by sawtooth wave with added FM modulation to simulate vibrato.

### **Flute**

Nonlinear synthesis with polynomial up to 11<sup>th</sup> order.

### **Acoustic guitar**

Karplus strong algorithm

### **Piano**

Subtractive synthesis with 2 low-pass filters and one high-pass. Excitation wave was square with 77 duty. Also was used soft clipping

### **Harp**

FM with one oscillator modulating sine wave and filtered with low-pass filter

### **Electric base**

FM synthesis with two modulators modulating sine wave with added low-pass filter.

To the all instruments was added reverb.