I will survey various aspects on Floer homology from my point of view. The topics will include:

1) Basic concept and history:
The basic idea of Floer homology and how it has been developed especially in early days.

2) Foundation:
In general to give precise rigorous detail of Floer theory is hard. Many machinery and works have been developed for this purpose. I survey some of them.

3) Relation among various Floer theories.

4) Structures:
In recent years many structures have been discovered and studied in Floer homology. They are very important in various applications and I will explain some of them.

5) Applications:
Application of Floer homology is important in symplectic geometry, gauge theory and low dimensional topology, and mathematical physics such as Mirror symmetry. I will explain some of them.

6) Challenge:
I want to mention some directions of the future research where Floer theory can develop.