

**Feedback control for computer systems** / Janert, Philipp K. 1<sup>st</sup>. ed rev.

**ISBN: 9781449361693**

pt. I Foundations

1. Why Feedback?
2. Feedback Systems
3. System Dynamics
4. Controllers
5. Identifying Input and Output Signals
6. Review and Outlook

pt. II Practice

7. Theory Preview
8. Measuring the Transfer Function
9. PID Tuning
10. Implementation Issues
11. Common Feedback Architectures
12. Exploring Control Systems Through Simulation
13. Case Study: Cache Hit Rate
14. Case Study: Ad Delivery
15. Case Study: Scaling Server Instances
16. Case Study: Waiting-Queue Control
17. Case Study: Cooling Fan Speed
18. Case Study: Controlling Memory Consumption in a Game Engine
19. Case Study Wrap-Up

pt. IV Theory

20. The Transfer Function
21. Block-Diagram Algebra and the Feedback Equation
22. PID Controllers
23. Poles and Zeros
24. Root Locus Techniques
25. Frequency Response and the Bode Plot

26. Topics Beyond This Book: Discrete-Time Modeling and the z-Transform -- State-Space Methods -- Robust Control -- Optimal Control -- Mathematical Control Theory

pt. V Appendices.