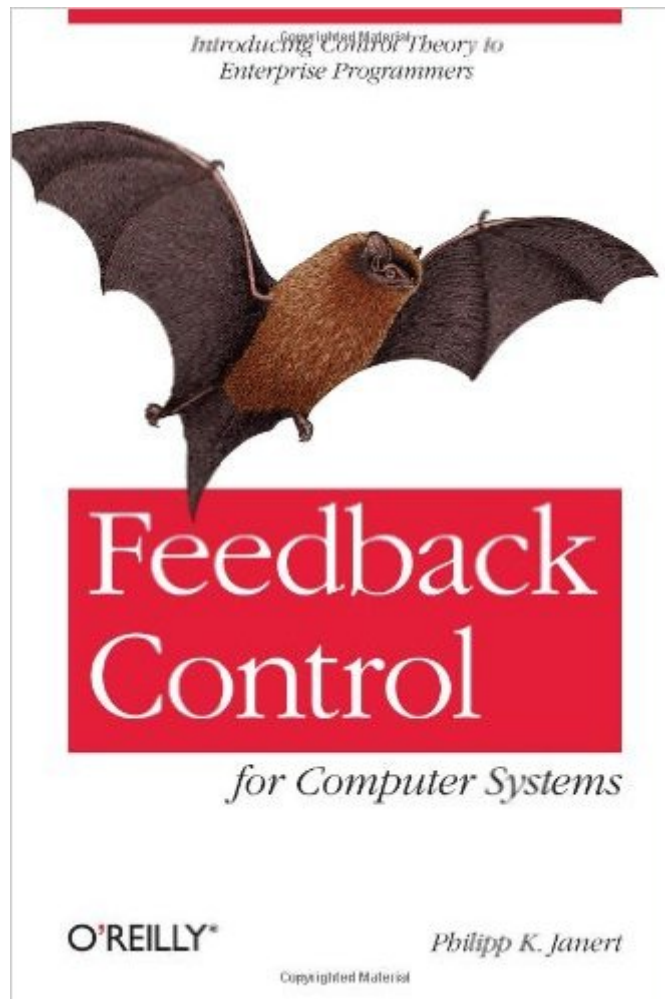


The book was found

Feedback Control For Computer Systems



Synopsis

How can you take advantage of feedback control for enterprise programming? With this book, author Philipp K. Janert demonstrates how the same principles that govern cruise control in your car also apply to data center management and other enterprise systems. Through case studies and hands-on simulations, you'll learn methods to solve several control issues, including mechanisms to spin up more servers automatically when web traffic spikes. Feedback is ideal for controlling large, complex systems, but its use in software engineering raises unique issues. This book provides basic theory and lots of practical advice for programmers with no previous background in feedback control. Learn feedback concepts and controller design Get practical techniques for implementing and tuning controllers Use feedback design patterns for common control scenarios Maintain a cache's hit rate by automatically adjusting its size Respond to web traffic by scaling server instances automatically Explore ways to use feedback principles with queueing systems Learn how to control memory consumption in a game engine Take a deep dive into feedback control theory

Book Information

Paperback: 336 pages

Publisher: O'Reilly Media; 1 edition (November 3, 2013)

Language: English

ISBN-10: 1449361692

ISBN-13: 978-1449361693

Product Dimensions: 6 x 0.6 x 9 inches

Shipping Weight: 1.1 pounds (View shipping rates and policies)

Average Customer Review: 4.5 out of 5 stars [See all reviews](#) (6 customer reviews)

Best Sellers Rank: #905,656 in Books (See Top 100 in Books) #53 in [Books > Computers &](#)

[Technology > Hardware & DIY > Microprocessors & System Design > Control Systems](#) #451

in [Books > Computers & Technology > Databases & Big Data > Data Modeling & Design](#) #657

in [Books > Computers & Technology > Databases & Big Data > Data Processing](#)

Customer Reviews

If you write code for fun or for a livelihood, I recommend you check this book out. According to the book, Feedback Control is a topic well known to mechanical engineers, but not so much in the software industry. Feedback Control is about making smarter systems that can cope with dynamic environments. Many knobs that developers build into configuration can actually be automated with

feedback loops. Examples given early in the book:*

- * A Cache by tracking hit rate and changing the cache size
- * A Server Farm by tracking request latency and changing number of deployed server nodes
- * A Queueing System by tracking wait time and changing the number of workers
- * A Graphics Library by tracking memory consumption and changing the output resolution

The book is well written. It starts out with practical examples and working code. It later introduces the deep theory and drops some math bombs. Don't worry, there is Python code for everything and you don't have to understand the math. It gives solid advice, like don't blindly use Feedback Control for optimization; optimization needs a higher level strategy guiding the process. Lastly, there are references for further reading, if you do want to work through more of the theory. The term Enterprise is thrown about, don't let this scare you away :) This is a valuable book for many types of software problems. A couple I've brainstormed while reading:*

- * Controlling difficulty of a video game, to react to how skilled a player is
- * Controlling aspects of an animation
- * Controlling polling of APIs for fresh data
- * Driving load testing to find different scaling points (errors, high latency, etc)

If you have a coding situation that smells even a little bit like a PID controller would help then you should get this book to provide good explanation of how dynamic control behaves in software. Good solid actionable info and clear presentation. Well done and thanks for filling a much needed segment of software fundamentals.

This should be required reading for any software architect or developer that's working on large scale distributed systems, microservices, cloud computing... anything where correct behavior depends on corrective automation. Engineers working with physical systems -- manufacturing, propulsion, power generation, fabrication, etc. -- have always relied upon the fundamentals of control theory and feedback; for some reason we haven't included these ideas as part of the core of software engineering. Fix that. Now.

[Download to continue reading...](#)

Feedback Control for Computer Systems HACKING: Beginner's Crash Course - Essential Guide to Practical: Computer Hacking, Hacking for Beginners, & Penetration Testing (Computer Systems, Computer Programming, Computer Science Book 1) Feedback Control Problems Using MATLAB and the Control System Toolbox (Bookware Companion (Paperback)) Feedback Control of Dynamic Systems (7th Edition) Feedback Control Systems (5th Edition) Schaum's Outline of Feedback and Control Systems Multivariable Feedback Control: Analysis and Design Introduction to Feedback Control Feedback Systems: An Introduction for Scientists and Engineers Multivariable Feedback

Design (Electronic Systems Engineering Series) Computer Programming Box Set (4 in 1): Linux, Raspberry Pi, Evernote, and Python Programming for Beginners (Computer Programming & Operating Systems) Mathematics and Computer Science in Medical Imaging (Nato a S I Series Series III, Computer and Systems Sciences) Bell Telephone System Feedback Amplifier Design The Feedback Loop: (Book One) (Sci-Fi LitRPG Series) The Feedback Loop (3-Book Box Set): (Scifi LitRPG Series) Steampunk is Dead: (Book Two) (Sci-Fi LitRPG Series) (The Feedback Loop 2) NLP: Neuro Linguistic Programming: Re-program your control over emotions and behavior, Mind Control - 3rd Edition (Hypnosis, Meditation, Zen, Self-Hypnosis, Mind Control, CBT) Digital Control Systems (The Oxford Series in Electrical and Computer Engineering) Wind Turbine Control Systems: Principles, Modelling and Gain Scheduling Design (Advances in Industrial Control) Handbook of Networked and Embedded Control Systems (Control Engineering)

[Dmca](#)