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Computerized Engine Controls Electronic Engine Control Technologies Parallel Processing for Jet Engine Control Implementation of an Artificial Neural Network in Engine Control Computers A Computer Model for the Assessment of Engine Control System Parameters Computer Simulation of Engine Control Systems Computerized Engine Control Parallelization of Automotive Control Software Engine Design, Operation, and Control Using Computer Systems Sea-level Evaluation of Digitally Implemented Turbojet Engine Control Functions Computer and Engine Performance Study of a Generalized Parameter Fuel Control for Jet Engines Electronics, Computers and Control in Automotive Applications GM Micro-computer Engine Control System Iml Computerized Engine Ctrl The Computer Control of Engine Testing SAE 2004-30-0037, Computer-Aided Optimization of Engine Control Unit Transient Maps Self-teaching Digital-computer Program for Fail-operational Control of a Turbojet Engine in a Sea-level Test Stand Optimal Computer Control of Engine Test Rigs Computerized Engine Control The Development of an Airborne Instrumentation Computer System for Flight Test Computerized engine controls Advanced Engine Control System Study Computer Aided Data Acquisition and Control of an Internal Combustion Engine Counter Tech 2000 Real-time Hybrid Computer Simulation of a Small Turboshaft Engine and Control System Micro-computer Control of an IC Engine Test Bed Computer Control and Data Acquisition System for an Engine Dynamometer Computer Command Control Engine Performance Computer Control Strategies for Optimal Engine Performance Design of Helicopter Digital Engine Control Systems Using Computer Simulation Computer Control and Data Acquisition for Internal Combustion Engine Testing Application of a Commercially Available Process Control Computer to Engine Testing Predicted Performance Benefits of an Adaptive Digital Engine Control System of an F-15 Airplane Automotive Computers and Control Systems Computer Aided Data Acquisition and Control of an Internal Combustion Engine Programming Microcontrollers in C Transient Engine Testing by Computer Control Electronic Engine Control Technologies Engine Modeling and Control Digital Implementation of the TF30-P-3 Turbofan Engine Control

Computerized Engine Controls

2002

in this second edition of electronic engine control technologies the latest advances and technologies of electronic engine control are explored in a collection of 99 technical papers none of which were included in the book s first edition editor ronald k jurgen offers an informative introduction neural networks on the rise clearly explaining the book s overall format and layout the book then closely examines the many areas surrounding electronic engine control technologies including specific engine controls diagnostics engine modeling innovative solid state hardware and software systems communication techniques for engine control neural network applications and the future of electronic engine controls

Electronic Engine Control Technologies

2004-03-13

parallel processing applications for jet engine control is a volume in the new advances in industrial control series edited by professor m j grimble and dr m a johnson of the industrial control unit university of strathclyde the book describes the mapping and load balancing of gas turbine engine and controller simulations onto arrays of transputers it compares the operating system for transputers and the uniform system upon the butterfly plus computer the problem of applying formal methods to parallel asychronous processors is addressed implementing novel fault tolerant systems to meet real time flight control requirements the book presents real time closed loop results highlighting the advantages and disadvantages of occam and the transputer readers will find that this book provides valuable material for researchers in both academia and the aerospace industry

Parallel Processing for Jet Engine Control

2012-12-06

computerized engine controls 5e 1998 update to the fifth edition explores the many ways in which computers affect the driveability performance fuel economy and emissions quality of today s vehicles by referencing the fundamentals of electricity and computers this text illustrates how to systematically apply the information to products of virtually all automobile manufacturers each chapter contains real world examples of applications of the information presented selected lists of technical terms introduced diagnostic exercises and review questions

Implementation of an Artificial Neural Network in Engine Control Computers

1998

der eingebettete mehrkernprozessor wird als die hardware plattform angesehen welche den stetig steigenden rechenanforderungen von steuerungs software in automobilen gerecht wird dieser verfügt über eine höhere rechenleistung und verbraucht weniger energie steuerungs software wird entsprechend dem automotive open system architecture autosar standard entwickelt runnables elementare code abschnitte bilden strukturiert in software components angeordnet das funktionale verhalten des reglers ab bei der migration auf mehrkernprozessoren soll existierende steuerungs software wiederverwendet werden gegenstand der dissertation ist die migration existierender autosar steuerungs software auf mehrkernprozessorsteuergeräte zentrale herausforderungen sind 1 datenabhängigkeiten zwischen runnables müssen beachtet werden was die erreichbare parallelität einschränkt 2 der ursprüngliche datenfluss und dessen latenz müssen nachgebildet werden um dasselbe funktionale verhalten ohne aufwändige validierung oder tests zu erreichen 3 das energiesparpotenzial des prozessors soll genutzt werden auf runnable ebene verteilt runpar runnables statt tasks darüber hinaus wird die parallelität durch das konzept der supertask erhöht diese gruppiert runnables von nacheinander ausgeführten tasks deren runnables anschließend mittels runpar verteilt werden auf task ebene entkoppelt timed implicit communication tic die kommunikation zwischen tasks um die parallele ausführung von produzierender und konsumierender task zu ermöglichen ein vergleich mit runpar legt nahe dass

es sich bei runnable und task ebenen parallelisierung um einander ergänzend einzusetzende strategien handelt schließlich wird eine koordinierende strategie vorgeschlagen welche beide parallelisierungsebenen kombiniert der verarbeitungspfad von sensor zu aktuator wird explizit modelliert dies ermöglicht die berücksichtigung der latenz task perioden und prozessortakt werden

A Computer Model for the Assessment of Engine Control System Parameters

1994

the standard hydromechanical control system of a turbojet engine was replaced with a digital control system that implemented the same control laws a detailed discussion of the digital control system in use with the engine is presented the engine was operated in a sea level test stand the effects of control update interval are defined and a method for extending this interval by using digital compensation is discussed

Computer Simulation of Engine Control Systems

1980

a mathematical analysis of a generalized parameter hydraulic fuel control concept is presented an analog computer simulation was used to establish the feasibility of the fuel control concept for jet engine applications the simulation of the fuel control was first operated with a simulation of the j85 13 engine and then operated as an experimental control with an actual 585 13 engine in a test cell results obtained from the use of the simulated fuel control with both the simulated and actual engines are presented the operation of the control is discussed and its performance is compared with that of the normal 585 13 control

Computerized Engine Control

1998

completely updated by an ase master certified automotive technician the sixth edition of computerized engine controls explains how computerized engine control systems operate and translates these concepts into proven effective diagnostic approaches tackling both domestic and foreign engine control systems the book begins with an introduction to common engine control components and features an entire chapter on obd ii chapters that follow explore the ins and outs of important multiplexing and diagnostic concepts introducing readers to diagnostic equipment and tests that allow quick identification of problem areas in computerized engine control systems emphasis is on how to effectively diagnose and troubleshoot a variety of computer controls from complex anti lock braking traction control and restraint systems to high tech transmissions suspensions and air conditioning systems this book also provides a solid foundation for expansion into light duty gasoline or heavy duty diesel applications

Parallelization of Automotive Control Software

2016-12-20

the introduction of the european transient cycle etc in the regulation of the heavy duty diesel engines makes it necessary to optimize also in transient the nox soot bsfc trade offs this affects for instance the engine control unit ecu maps controlling the transient behavior of injection timing pressure and egr valve position this article describes a method consisting first of building a transient model of the engine using recurrent neural networks and then of using this model for an off line optimization on the etc of the transient ecu maps the method was applied on transient response tests at constant speed of a euro 4 engine with egr the model built showed consistent trends and the optimized map did match the empirical experience on this simple test

Engine Design, Operation, and Control Using Computer Systems

1989-01-01

instrumentation interfacing frequently requires the linking of intelligent systems together as well as requiring the link itself to be intelligent the airborne instrumentation computer system aics was developed to address this requirement its small size approximately 254 by 133 by 140 mm standard bus and modular board configuration give it the ability to solve instrumentation interfacing and computation problems without forcing a redesign of the entire unit this system has been used on the f 15 aircraft digital electronic engine control deec and its follow on engine model derivation emd project and in an ov 1c mohawk aircraft stall speed warning system the aics is presently undergoing configuration for use on an f 104 pace aircraft and on the advanced fighter technology integration afti f 111 aircraft

Sea-level Evaluation of Digitally Implemented Turbojet Engine Control Functions

1972

the report presents the results of a program conducted to design and evaluate an advanced engine control system for a small 2 to 5 pounds per second airflow turboshaft engine the objective of this program was to evaluate the feasibility of a unique engine control system consisting of closed loop turbine inlet temperature limiting electronic computation and either of two novel fuel metering systems control mode logic and dynamics were analyzed using computer simulation techniques control computer logic and circuitry were established and all elements of the control system were designed it was concluded that a minaturized advanced control system weighing 6 to 9 pounds including pump is feasible with either of two fuel metering systems and with either analog or digital electronic computation author

Computer and Engine Performance Study of a Generalized Parameter Fuel Control for Jet Engines

1970

techniques for programming microcontrollers or single chip computers that are used in auto engine control missile guidance medical devices and other tasks where a tiny self contained computer is needed

Electronics, Computers and Control in Automotive Applications

1979

in this second edition of electronic engine control technologies the latest advances and technologies of electronic engine control are explored in a collection of 99 technical papers none of which were included in the book s first edition editor ronald k jurgen offers an informative introduction neural networks on the rise clearly explaining the book s overall format and layout the book then closely examines the many areas surrounding electronic engine control technologies including specific engine controls diagnostics engine modeling innovative solid state hardware and software systems communication techniques for engine control neural network applications and the future of electronic engine controls

GM Micro-computer Engine Control System

1980

the increasing demands for internal combustion engines with regard to fuel consumption emissions and driveability lead to more actuators sensors and complex control functions a systematic implementation of the electronic control systems requires mathematical models from basic design through simulation to calibration the book treats physically based as well as models based experimentally on test benches for gasoline spark ignition and diesel compression ignition engines and uses them for the design of the different control functions the main

topics are development steps for engine control stationary and dynamic experimental modeling physical models of intake combustion mechanical system turbocharger exhaust cooling lubrication drive train engine control structures hardware software actuators sensors fuel supply injection system camshaft engine control methods static and dynamic feedforward and feedback control calibration and optimization hil rcp control software development control of gasoline engines control of air fuel ignition knock idle coolant adaptive control functions control of diesel engines combustion models air flow and exhaust recirculation control combustion pressure based control hcci optimization of feedforward and feedback control smoke limitation and emission control this book is an introduction to electronic engine management with many practical examples measurements and research results it is aimed at advanced students of electrical mechanical mechatronic and control engineering and at practicing engineers in the field of combustion engine and automotive engineering

Iml Computerized Engine Ctrl

2003-09-01

The Computer Control of Engine Testing

1971

SAE 2004-30-0037, Computer-Aided Optimization of Engine Control Unit Transient Maps

1999

Self-teaching Digital-computer Program for Fail-operational Control of a Turbojet Engine in a Sea-level Test Stand

1974

Optimal Computer Control of Engine Test Rigs

1975

Computerized Engine Control

1997-01-01

The Development of an Airborne Instrumentation Computer System for Flight Test

1984

Computerized engine controls

2009

Advanced Engine Control System Study

1969

Computer Aided Data Acquisition and Control of an Internal Combustion Engine

1954

Counter Tech 2000

1998-12-01

Real-time Hybrid Computer Simulation of a Small Turboshaft Engine and Control System

1984

Micro-computer Control of an IC Engine Test Bed

1989

Computer Control and Data Acquisition System for an Engine Dynamometer

1985

Computer Command Control Engine Performance

1983

Computer Control Strategies for Optimal Engine Performance

1987

Design of Helicopter Digital Engine Control Systems Using Computer Simulation

1995

Computer Control and Data Acquisition for Internal Combustion Engine Testing

1994

Application of a Commercially Available Process Control Computer to Engine Testing

1985

Predicted Performance Benefits of an Adaptive Digital Engine Control System of an F-15 Airplane

1985

Automotive Computers and Control Systems

1984

Computer Aided Data Acquisition and Control of an Internal Combustion Engine

1954

Programming Microcontrollers in C

1994

Transient Engine Testing by Computer Control

1972

Electronic Engine Control Technologies

2004-03-13

Engine Modeling and Control

2014-07-01

Digital Implementation of the TF30-P-3 Turbofan Engine Control

1975