


Mahdi Tavakoli

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Websites & Social Links

Research website (<http://www.ece.ualberta.ca/~mtavakol>)

Telerobotic and Biorobotic Systems Group website (<http://www.ece.ualberta.ca/~tbs>)

Robotics for Combating COVID-19 website (<http://www.ece.ualberta.ca/~tbs/pmwiki/index.php?n=Community.RoboticsForCOVID-19>)

Keywords

Robotics and Telerobotics, Haptics and Teleoperation Control, Surgical and Therapeutic Robotics, Image-Guided Surgery

Other IDs

Scopus Author ID: 8668966400 (<http://www.scopus.com/inward/authorDetails.url?authorID=8668966400&partnerID=MN8TOARS>)

Loop profile: 873554 (http://loop.frontiersin.org/people/873554/overview?referrer=orcid_profile)

Biography

Mahdi Tavakoli received his BSc and MSc degrees in Electrical Engineering from Ferdowsi University and K.N. Toosi University, Iran, in 1996 and 1999, respectively. He then received his PhD degree in Electrical and Computer Engineering from the University of Western Ontario, London, ON, Canada, in 2005. In 2006, he was a post-doctoral research associate at Canadian Surgical Technologies and Advanced Robotics (CSTAR), London, ON, Canada. In 2007-2008, and prior to joining the Department of Electrical and Computer Engineering at the University of Alberta, Dr. Tavakoli was an NSERC Post-Doctoral Fellow with the BioRobotics Laboratory of the School of Engineering and Applied Sciences at Harvard University, Cambridge, MA, USA. Dr. Tavakoli's research interests broadly involve the areas of robotics and systems control. Specifically, his research focuses on haptics and teleoperation control, medical robotics, and image-guided surgery.

Lab website: <http://www.ece.ualberta.ca/~tbs>

Works (205 of 205)

Using Potential Field Function With a Velocity Field Controller to Learn and Reproduce the Therapist's Assistance in Robot-Assisted Rehabilitation

IEEE/ASME Transactions on Mechatronics
2020-06 | journal-article

DOI: 10.1109/TMECH.2020.2981625

Source:Crossref

Robotics, Smart Wearable Technologies, and Autonomous Intelligent Systems for Healthcare During the COVID-19 Pandemic: An Analysis of the State of the Art and Future Vision

Advanced Intelligent Systems
2020-05-05 | journal-article

DOI: 10.1002/aisy.202000071

Source:Crossref

Haptic Tele-Driving of Wheeled Mobile Robots Under Nonideal Wheel Rolling, Kinematic Control and Communication Time Delay

IEEE Transactions on Systems, Man, and Cybernetics: Systems
2020-01 | journal-article

DOI: 10.1109/TSMC.2017.2738670

Source:Crossref

A feasibility study of eye gaze with biofeedback in a human-robot interface*Assistive Technology*

2020 | journal-article

DOI: 10.1080/10400435.2020.1719557

EID: 2-s2.0-85079132703

Part of ISBN: 19493614 10400435

Source:Mahdi TavakoliviaScopus - Elsevier

Assist-as-needed policy for movement therapy using telerobotics-mediated therapist supervision*Control Engineering Practice*

2020 | journal-article

DOI: 10.1016/j.conengprac.2020.104481

EID: 2-s2.0-85085734020

Part of ISBN: 09670661

Source:Mahdi TavakoliviaScopus - Elsevier

Dynamic Reconfiguration of Redundant Haptic Interfaces for Rendering Soft and Hard Contacts*IEEE Transactions on Haptics*

2020 | journal-article

DOI: 10.1109/TOH.2020.2988495

EID: 2-s2.0-85083800970

Part of ISBN: 23294051 19391412

Source:Mahdi TavakoliviaScopus - Elsevier

Effect of feedback and target size on eye gaze accuracy in an off-screen task*Disability and Rehabilitation: Assistive Technology*

2020 | journal-article

DOI: 10.1080/17483107.2020.1729874

EID: 2-s2.0-85080084875

Part of ISBN: 17483115 17483107

Source:Mahdi TavakoliviaScopus - Elsevier

Intelligent Robotics Incorporating Machine Learning Algorithms for Improving Functional Capacity Evaluation and Occupational Rehabilitation*Journal of Occupational Rehabilitation*

2020 | journal-article

DOI: 10.1007/s10926-020-09888-w

EID: 2-s2.0-85083383242

Part of ISBN: 15733688 10530487

Source:Mahdi TavakoliviaScopus - Elsevier

Learning and Reproduction of Therapist's Semi-Periodic Motions during Robotic Rehabilitation*Robotica*

2020 | journal-article

DOI: 10.1017/S0263574719000651

EID: 2-s2.0-85065979319

Part of ISBN: 14698668 02635747

Source:Mahdi Tavakoli via Scopus - Elsevier

A cooperative paradigm for task-space control of multilateral nonlinear teleoperation with bounded inputs and time-varying delays*Mechatronics*

2019-10 | journal-article

DOI: 10.1016/j.mechatronics.2019.102255

Source:Crossref

An Integrator-Backstepping Control Approach for Three-Dimensional Needle Steering*IEEE/ASME Transactions on Mechatronics*

2019-10 | journal-article

DOI: 10.1109/TMECH.2019.2930732

Source:Crossref

A Therapist-Taught Robotic System for Assistance During Gait Therapy Targeting Foot Drop*IEEE Robotics and Automation Letters*

2019-04 | journal-article

DOI: 10.1109/LRA.2018.2890674

Source:Crossref

Application of a Redundant Haptic Interface in Enhancing Soft-Tissue Stiffness Discrimination*IEEE Robotics and Automation Letters*

2019-04 | journal-article

DOI: 10.1109/LRA.2019.2893606

Source:Crossref

Improving User Performance in Haptics-Based Rehabilitation Exercises by Colocation of User's Visual and Motor Axes via a Three-Dimensional Augmented-Reality Display*IEEE Robotics and Automation Letters*

2019-04 | journal-article

DOI: 10.1109/LRA.2019.2891283

Source:Crossref

A multilateral impedance-controlled system for haptics-enabled surgical training and cooperation in beating-heart surgery*International Journal of Intelligent Robotics and Applications*

2019 | journal-article

DOI: 10.1007/s41315-019-00099-y

EID: 2-s2.0-85075332034

Part of ISBN: 2366598X 23665971

Source:Mahdi Tavakoli via Scopus - Elsevier

A robot with an augmented-reality display for functional capacity evaluation and rehabilitation of injured workers

IEEE International Conference on Rehabilitation Robotics

2019 | conference-paper

DOI: 10.1109/ICORR.2019.8779417

EID: 2-s2.0-85071164445

Part of ISBN: 19457901 19457898

Source:Mahdi TavakoliviaScopus - Elsevier

A Therapist-Taught Robotic System for Assistance During Gait Therapy Targeting Foot Drop

IEEE Robotics and Automation Letters

2019 | journal-article

DOI: 10.1109/LRA.2018.2890674Y

EID: 2-s2.0-85063312061

Part of ISBN: 23773766

Source:Mahdi TavakoliviaScopus - Elsevier

An Admittance-Controlled Robotic Assistant for Semi-Autonomous Breast Ultrasound Scanning

2019 International Symposium on Medical Robotics, ISMR 2019

2019 | conference-paper

DOI: 10.1109/ISMR.2019.8710206

EID: 2-s2.0-85066310902

Source:Mahdi TavakoliviaScopus - Elsevier

Control of a mechatronics-assisted system for surgeries using flexible tools

IEEE International Conference on Automation Science and Engineering

2019 | conference-paper

DOI: 10.1109/COASE.2019.8843061

EID: 2-s2.0-85072988013

Part of ISBN: 21618089 21618070

Source:Mahdi TavakoliviaScopus - Elsevier

Controlled Synchronization of Nonlinear Teleoperation in Task-space with Time-varying Delays

International Journal of Control, Automation and Systems

2019 | journal-article

DOI: 10.1007/s12555-018-0120-z

EID: 2-s2.0-85069911232

Part of ISBN: 20054092 15986446

Source:Mahdi TavakoliviaScopus - Elsevier

Geometric control of 3D needle steering in soft-tissue

Automatica

2019 | journal-article

DOI: 10.1016/j.automatica.2018.11.018

EID: 2-s2.0-85058245175

Part of ISBN: 00051098

Source:Mahdi TavakoliviaScopus - Elsevier

Image-Guided Observer-Based Control for Needle Steering*IEEE Transactions on Control Systems Technology*

2019 | journal-article

DOI: 10.1109/TCST.2019.2944117

Source:Crossref

Semi-autonomous robot-assisted cooperative therapy exercises for a therapist's interaction with a patient*GlobalSIP 2019 - 7th IEEE Global Conference on Signal and Information Processing, Proceedings*

2019 | conference-paper

DOI: 10.1109/GlobalSIP45357.2019.8969143

EID: 2-s2.0-85079270550

Source:Mahdi TavakoliviaScopus - Elsevier

Semi-autonomous surgical robot control for beating-heart surgery*IEEE International Conference on Automation Science and Engineering*

2019 | conference-paper

DOI: 10.1109/COASE.2019.8843275

EID: 2-s2.0-85072951179

Part of ISBN: 21618089 21618070

Source:Mahdi TavakoliviaScopus - Elsevier

Supporting play by applying haptic guidance along a surface learnt from single motion trajectories*IEEE International Conference on Rehabilitation Robotics*

2019 | conference-paper

DOI: 10.1109/ICORR.2019.8779391

EID: 2-s2.0-85071149053

Part of ISBN: 19457901 19457898

Source:Mahdi TavakoliviaScopus - Elsevier

Task-space position and containment control of redundant manipulators with bounded inputs*IEEE International Conference on Automation Science and Engineering*

2019 | conference-paper

DOI: 10.1109/COASE.2019.8842863

EID: 2-s2.0-85072986264

Part of ISBN: 21618089 21618070

Source:Mahdi TavakoliviaScopus - Elsevier

Visual-Haptic Colocation in Robotic Rehabilitation Exercises Using a 2D Augmented-Reality Display*2019 International Symposium on Medical Robotics, ISMR 2019*

2019 | conference-paper

DOI: 10.1109/ISMR.2019.8710185

EID: 2-s2.0-85066311805

Source:Mahdi TavakoliviaScopus - Elsevier

Ways to learn a therapist's patient-specific intervention: Robotics-vs telerobotics-mediated hands-on teaching

Proceedings - IEEE International Conference on Robotics and Automation

2019 | conference-paper

DOI: 10.1109/ICRA.2019.8793907

EID: 2-s2.0-85071457519

Part of ISBN: 10504729

Source:Mahdi TavakoliviaScopus - Elsevier

Robotic-Assisted Needle Steering Around Anatomical Obstacles Using Notched Steerable Needles

IEEE Journal of Biomedical and Health Informatics

2018-11 | journal-article

DOI: 10.1109/JBHI.2017.2780192

Source:Crossref

Model-Based Needle Steering in Soft Tissue via Lateral Needle Actuation

IEEE Robotics and Automation Letters

2018-10 | journal-article

DOI: 10.1109/LRA.2018.2858001

Source:Crossref

A Computational-Model-Based Study of Supervised Haptics-Enabled Therapist-in-the-Loop Training for Upper-Limb Poststroke Robotic Rehabilitation

IEEE/ASME Transactions on Mechatronics

2018-04 | journal-article

DOI: 10.1109/TMECH.2018.2806918

Source:Crossref

Position-Force Domain Passivity of the Human Arm in Telerobotic Systems

IEEE/ASME Transactions on Mechatronics

2018-04 | journal-article

DOI: 10.1109/TMECH.2018.2793877

Source:Crossref

Intraoperative Tissue Young's Modulus Identification During Needle Insertion Using a Laterally Actuated Needle

IEEE Transactions on Instrumentation and Measurement

2018-02 | journal-article

DOI: 10.1109/TIM.2017.2774182

Source:Crossref

Human-Machine Collaboration Modalities for Semi-Automated Needle Insertion Into Soft Tissue

IEEE Robotics and Automation Letters

2018-01 | journal-article

DOI: 10.1109/LRA.2017.2768123

Source:Crossref

Surgeon-in-the-Loop 3-D Needle Steering Through Ultrasound-Guided Feedback Control*IEEE Robotics and Automation Letters*

2018-01 | journal-article

DOI: 10.1109/LRA.2017.2768122

Source:Crossref

Applications of observers in medical robotics*At-Automatisierungstechnik*

2018 | journal-article

DOI: 10.1515/auto-2017-0062

EID: 2-s2.0-85044238244

Part of ISBN: 2196677X 01782312

Source:Mahdi TavakoliviaScopus - Elsevier

Beating-heart robotic surgery using bilateral impedance control: Theory and experiments*Biomedical Signal Processing and Control*

2018 | journal-article

DOI: 10.1016/j.bspc.2018.05.015

EID: 2-s2.0-85048557965

Part of ISBN: 17468108 17468094

Source:Mahdi TavakoliviaScopus - Elsevier

Bilateral Adaptive Control of Nonlinear Teleoperation Systems with Uncertain Dynamics and Dead-Zone*Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*

2018 | journal-article

DOI: 10.1115/1.4040666

EID: 2-s2.0-85051194981

Part of ISBN: 15289028 00220434

Source:Mahdi TavakoliviaScopus - Elsevier

Development of an Assistive Robotic System with Virtual Assistance to Enhance Play for Children with Disabilities: A Preliminary Study*Journal of Medical and Biological Engineering*

2018 | journal-article

DOI: 10.1007/s40846-017-0305-6

EID: 2-s2.0-85043333859

Part of ISBN: 21994757 16090985

Source:Mahdi TavakoliviaScopus - Elsevier

Generating forbidden region virtual fixtures by classification of movement intention based on event-related desynchronization*2017 IEEE Global Conference on Signal and Information Processing, GlobalSIP**2017 - Proceedings*

2018 | conference-paper

DOI: 10.1109/GlobalSIP.2017.8308676

EID: 2-s2.0-85048179654

Source:Mahdi TavakoliviaScopus - Elsevier

Haptic Tele-cooperation of Multiple Robots*5th RSI International Conference on Robotics and Mechatronics, IcRoM 2017*

2018 | conference-paper

DOI: 10.1109/ICRoM.2017.8466205

EID: 2-s2.0-85054509535

Source:Mahdi Tavakoli via Scopus - Elsevier**Hybrid analog/digital control of bilateral teleoperation systems***Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*

2018 | journal-article

DOI: 10.1115/1.4040440

EID: 2-s2.0-85050604519

Part of ISBN: 15289028 00220434**Source:**Mahdi Tavakoli via Scopus - Elsevier**Impedance control of non-linear multi-DOF teleoperation systems with time delay: Absolute stability***IET Control Theory and Applications*

2018 | journal-article

DOI: 10.1049/iet-cta.2017.1253

EID: 2-s2.0-85051264041

Part of ISBN: 17518652 17518644**Source:**Mahdi Tavakoli via Scopus - Elsevier**Improving User Performance in Haptics-Based Rehabilitation Exercises by Colocation of User's Visual and Motor Axes via a Three-Dimensional Augmented-Reality Display***IEEE Robotics and Automation Letters*

2018 | journal-article

DOI: 10.1109/LRA.2019.2891283Y

EID: 2-s2.0-85063310845

Part of ISBN: 23773766**Source:**Mahdi Tavakoli via Scopus - Elsevier**Kinesthetic teaching of a therapist's behavior to a rehabilitation robot***2018 International Symposium on Medical Robotics, ISMR 2018*

2018 | conference-paper

DOI: 10.1109/ISMR.2018.8333285

EID: 2-s2.0-85050602879

Source:Mahdi Tavakoli via Scopus - Elsevier**Manipulability of teleoperated surgical robots with application in design of master/slave manipulators***2018 International Symposium on Medical Robotics, ISMR 2018*

2018 | conference-paper

DOI: 10.1109/ISMR.2018.8333307

EID: 2-s2.0-85050598019

Source:Mahdi Tavakoli via Scopus - Elsevier

Multi-lateral Nonlinear Time-Delayed Teleoperation in a Multi-agent Systems Framework*5th RSI International Conference on Robotics and Mechatronics, IcRoM 2017*

2018 | conference-paper

DOI: 10.1109/ICRoM.2017.8466167

EID: 2-s2.0-85054535941

Source:Mahdi TavakoliviaScopus - Elsevier**Patient-Robot-therapist collaboration using resistive impedance controlled tele-robotic systems subjected to time delays***Journal of Mechanisms and Robotics*

2018 | journal-article

DOI: 10.1115/1.4040961

EID: 2-s2.0-85053228737

Part of ISBN: 19424310 19424302**Source:**Mahdi TavakoliviaScopus - Elsevier**Preliminary testing by adults of a haptics-assisted robot platform designed for children with physical impairments to access play***Assistive Technology*

2018 | journal-article

DOI: 10.1080/10400435.2017.1318974

EID: 2-s2.0-85023172214

Part of ISBN: 19493614 10400435**Source:**Mahdi TavakoliviaScopus - Elsevier**Preliminary Testing of a Telerobotic Haptic System and Analysis of Visual Attention during a Playful Activity***Proceedings of the IEEE RAS and EMBS International Conference on Biomedical Robotics and Biomechanics*

2018 | conference-paper

DOI: 10.1109/BIOROB.2018.8487612

EID: 2-s2.0-85056584825

Part of ISBN: 21551774**Source:**Mahdi TavakoliviaScopus - Elsevier**Section focused on new horizons in telerobotics for real-life applications***Advanced Robotics*

2018 | journal-article

DOI: 10.1080/01691864.2018.1503631

EID: 2-s2.0-85051182317

Part of ISBN: 15685535 01691864**Source:**Mahdi TavakoliviaScopus - Elsevier**Task-space synchronisation of nonlinear teleoperation with time-varying delays and actuator saturation***International Journal of Control*

2018 | journal-article

DOI: 10.1080/00207179.2018.1506158

EID: 2-s2.0-85051979667

Part of ISBN: 13665820 00207179**Source:**Mahdi TavakoliviaScopus - Elsevier

Towards robot-assisted anchor deployment in beating-heart mitral valve surgery*International Journal of Medical Robotics and Computer Assisted Surgery*

2018 | journal-article

DOI: 10.1002/rcs.1900

EID: 2-s2.0-85044327225

Part of ISBN: 1478596X 14785951

Source:Mahdi TavakoliviaScopus - Elsevier

Ultrasound image guidance and robot impedance control for beating-heart surgery*Control Engineering Practice*

2018 | journal-article

DOI: 10.1016/j.conengprac.2018.08.017

EID: 2-s2.0-85053168969

Part of ISBN: 09670661

Source:Mahdi TavakoliviaScopus - Elsevier

Usability testing of a developed assistive robotic system with virtual assistance for individuals with cerebral palsy: a case study*Disability and Rehabilitation: Assistive Technology*

2018 | journal-article

DOI: 10.1080/17483107.2017.1344884

EID: 2-s2.0-85021796963

Part of ISBN: 17483115 17483107

Source:Mahdi TavakoliviaScopus - Elsevier

A data-driven soft sensor for needle deflection in heterogeneous tissue using just-in-time modelling*Medical and Biological Engineering and Computing*

2017 | journal-article

DOI: 10.1007/s11517-016-1599-1

EID: 2-s2.0-85006448677

Part of ISBN: 17410444 01400118

Source:Mahdi TavakoliviaScopus - Elsevier

A Descriptor Approach to Robust Leader-Following Output Consensus of Uncertain Multi-Agent Systems with Delay*IEEE Transactions on Automatic Control*

2017 | journal-article

DOI: 10.1109/TAC.2016.2643444

EID: 2-s2.0-85031012781

Part of ISBN: 00189286

Source:Mahdi TavakoliviaScopus - Elsevier

A grasp-based passivity signature for haptics-enabled human-robot interaction: Application to design of a new safety mechanism for robotic rehabilitation

International Journal of Robotics Research

2017 | journal-article

DOI: 10.1177/0278364916689139

EID: 2-s2.0-85044041115

Part of ISBN: 17413176 02783649

Source:Mahdi TavakoliviaScopus - Elsevier

A Hand-Held Assistant for Semiautomated Percutaneous Needle Steering

IEEE Transactions on Biomedical Engineering

2017 | journal-article

DOI: 10.1109/TBME.2016.2565690

EID: 2-s2.0-85013480635

Part of ISBN: 15582531 00189294

Source:Mahdi TavakoliviaScopus - Elsevier

A novel adaptive order/parameter identification method for variable order systems application in viscoelastic soft tissue modeling

Chaos, Solitons and Fractals

2017 | journal-article

DOI: 10.1016/j.chaos.2017.04.005

EID: 2-s2.0-85018402006

Part of ISBN: 09600779

Source:Mahdi TavakoliviaScopus - Elsevier

A Passivity-Based Approach for Stable Patient-Robot Interaction in Haptics-Enabled Rehabilitation Systems: Modulated Time-Domain Passivity Control

IEEE Transactions on Control Systems Technology

2017 | journal-article

DOI: 10.1109/TCST.2016.2594584

EID: 2-s2.0-84982239001

Part of ISBN: 10636536

Source:Mahdi TavakoliviaScopus - Elsevier

An adaptive order/state estimator for linear systems with non-integer time-varying order

Automatica

2017 | journal-article

DOI: 10.1016/j.automatica.2017.06.042

EID: 2-s2.0-85021960084

Part of ISBN: 00051098

Source:Mahdi TavakoliviaScopus - Elsevier

Assistive technology design and preliminary testing of a robot platform based on movement intention using low-cost brain computer interface

2017 IEEE International Conference on Systems, Man, and Cybernetics, SMC 2017

2017 | conference-paper

DOI: 10.1109/SMC.2017.8122954

EID: 2-s2.0-85044373876

Source:Mahdi TavakoliviaScopus - Elsevier

Brachytherapy needle steering guidance using image overlay

Handbook of Research on Biomimetics and Biomedical Robotics

2017 | book-chapter

Part of DOI: 10.4018/978-1-5225-2993-4.ch008

EID: 2-s2.0-85045739762

Source:Mahdi TavakoliviaScopus - Elsevier

Cooperative modalities in robotic tele-rehabilitation using nonlinear bilateral impedance control

Control Engineering Practice

2017 | journal-article

DOI: 10.1016/j.conengprac.2017.07.002

EID: 2-s2.0-85026757798

Part of ISBN: 09670661

Source:Mahdi TavakoliviaScopus - Elsevier

Deflection modeling for a needle actuated by lateral force and axial rotation during insertion in soft phantom tissue

Mechatronics

2017 | journal-article

DOI: 10.1016/j.mechatronics.2017.10.008

EID: 2-s2.0-85033387075

Part of ISBN: 09574158

Source:Mahdi TavakoliviaScopus - Elsevier

Feedback-linearization-based 3D needle steering in a Frenet-Serret frame using a reduced order bicycle model

Proceedings of the American Control Conference

2017 | conference-paper

DOI: 10.23919/ACC.2017.7963155

EID: 2-s2.0-85027015547

Part of ISBN: 07431619

Source:Mahdi TavakoliviaScopus - Elsevier

FPA-based control of bilateral teleoperation systems for enhanced user task performance

Presence: Teleoperators and Virtual Environments

2017 | journal-article

DOI: 10.1162/PRES_a_00293

EID: 2-s2.0-85042804166

Part of ISBN: 15313263 10547460

Source:Mahdi TavakoliviaScopus - Elsevier

Intraoperative factors associated with stranded source placement accuracy in low-dose-rate prostate brachytherapy*Brachytherapy*

2017 | journal-article

DOI: 10.1016/j.brachy.2017.01.007

EID: 2-s2.0-85012013950

Part of ISBN: 18731449 15384721

Source:Mahdi TavakoliviaScopus - Elsevier

Issues in closed-loop needle steering*Control Engineering Practice*

2017 | journal-article

DOI: 10.1016/j.conengprac.2017.03.004

EID: 2-s2.0-85015676567

Part of ISBN: 09670661

Source:Mahdi TavakoliviaScopus - Elsevier

Kinematic Bilateral Teledriving of Wheeled Mobile Robots Coupled with Slippage*IEEE Transactions on Industrial Electronics*

2017 | journal-article

DOI: 10.1109/TIE.2016.2619320

EID: 2-s2.0-85015073246

Part of ISBN: 02780046

Source:Mahdi TavakoliviaScopus - Elsevier

Learning and robotic imitation of therapist's motion and force for post-disability rehabilitation*2017 IEEE International Conference on Systems, Man, and Cybernetics, SMC 2017*

2017 | conference-paper

DOI: 10.1109/SMC.2017.8122951

EID: 2-s2.0-85044397003

Source:Mahdi TavakoliviaScopus - Elsevier

Non-integer variable order dynamic modeling and identification of soft tissue deformation*Proceedings of the American Control Conference*

2017 | conference-paper

DOI: 10.23919/ACC.2017.7963054

EID: 2-s2.0-85027068134

Part of ISBN: 07431619

Source:Mahdi TavakoliviaScopus - Elsevier

Nonlinear Disturbance Observers: Design and Applications to Euler-Lagrange Systems*IEEE Control Systems*

2017 | journal-article

DOI: 10.1109/MCS.2017.2696760

EID: 2-s2.0-85029292054

Part of ISBN: 1066033X

Source:Mahdi TavakoliviaScopus - Elsevier

Nonlinear workspace mapping for telerobotic assistance of upper limb in patients with severe movement disorders

2017 *IEEE International Conference on Systems, Man, and Cybernetics, SMC*
2017

2017 | conference-paper

DOI: 10.1109/SMC.2017.8122956

EID: 2-s2.0-85044391443

Source:Mahdi TavakoliviaScopus - Elsevier

Position and velocity synchronization in bilateral teleoperation in presence of stochastic disturbances in control inputs

2017 *IEEE International Conference on Systems, Man, and Cybernetics, SMC*
2017

2017 | conference-paper

DOI: 10.1109/SMC.2017.8122945

EID: 2-s2.0-85044364712

Source:Mahdi TavakoliviaScopus - Elsevier

Quantifying ¹²⁵I placement accuracy in prostate brachytherapy using postimplant transrectal ultrasound images

Brachytherapy

2017 | journal-article

DOI: 10.1016/j.brachy.2016.11.015

EID: 2-s2.0-85011262984

Part of ISBN: 18731449 15384721

Source:Mahdi TavakoliviaScopus - Elsevier

Robotic assistance for children with cerebral palsy based on learning from tele-cooperative demonstration

International Journal of Intelligent Robotics and Applications

2017 | journal-article

DOI: 10.1007/s41315-016-0006-2

EID: 2-s2.0-85029909591

Part of ISBN: 2366598X 23665971

Source:Mahdi TavakoliviaScopus - Elsevier

Robotic learning from demonstration of therapist's time-varying assistance to a patient in trajectory-following tasks

IEEE International Conference on Rehabilitation Robotics

2017 | conference-paper

DOI: 10.1109/ICORR.2017.8009361

EID: 2-s2.0-85034809171

Part of ISBN: 19457901 19457898

Source:Mahdi TavakoliviaScopus - Elsevier

Semi-Automated Needle Steering in Biological Tissue Using an Ultrasound-Based Deflection Predictor

Annals of Biomedical Engineering

2017 | journal-article

DOI: 10.1007/s10439-016-1736-x

EID: 2-s2.0-84988433498

Part of ISBN: 15739686 00906964

Source:Mahdi TavakoliviaScopus - Elsevier

Sliding-based image-guided 3D needle steering in soft tissue*Control Engineering Practice*

2017 | journal-article

DOI: 10.1016/j.conengprac.2017.04.001

EID: 2-s2.0-85017120033

Part of ISBN: 09670661

Source:Mahdi TavakoliviaScopus - Elsevier

Stable Nonlinear Trilateral Impedance Control for Dual-User Haptic Teleoperation Systems with Communication Delays*Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*

2017 | journal-article

DOI: 10.1115/1.4037125

EID: 2-s2.0-85028550559

Part of ISBN: 15289028 00220434

Source:Mahdi TavakoliviaScopus - Elsevier

Tele-echography of moving organs using an Impedance-controlled telerobotic system*Mechatronics*

2017 | journal-article

DOI: 10.1016/j.mechatronics.2017.05.006

EID: 2-s2.0-85020042596

Part of ISBN: 09574158

Source:Mahdi TavakoliviaScopus - Elsevier

Physiological Organ Motion Prediction and Compensation Based on Multirate, Delayed, and Unregistered Measurements in Robot-Assisted Surgery and Therapy*IEEE/ASME Transactions on Mechatronics*

2016-04 | journal-article

DOI: 10.1109/TMECH.2015.2482391

Source:Crossref

A Gaussian Mixture Framework for Co-Operative Rehabilitation Therapy in Assistive Impedance-Based Tasks*IEEE Journal on Selected Topics in Signal Processing*

2016 | journal-article

DOI: 10.1109/JSTSP.2016.2532847

EID: 2-s2.0-84982740541

Part of ISBN: 19324553

Source:Mahdi TavakoliviaScopus - Elsevier

A Real-Time Estimator for Needle Deflection During Insertion Into Soft Tissue Based on Adaptive Modeling of Needle-Tissue Interactions*IEEE/ASME Transactions on Mechatronics*

2016 | journal-article

DOI: 10.1109/TMECH.2016.2598701

EID: 2-s2.0-84996848272

Part of ISBN: 10834435

Source:Mahdi TavakoliviaScopus - Elsevier

A Two-Body Rigid/Flexible Model of Needle Steering Dynamics in Soft Tissue*IEEE/ASME Transactions on Mechatronics*

2016 | journal-article

DOI: 10.1109/TMECH.2016.2549505

EID: 2-s2.0-84983565523

Part of ISBN: 10834435

Source:Mahdi TavakoliviaScopus - Elsevier

Adaptive Quasi-Static Modelling of Needle Deflection during Steering in Soft Tissue*IEEE Robotics and Automation Letters*

2016 | journal-article

DOI: 10.1109/LRA.2016.2527065

EID: 2-s2.0-85058585287

Part of ISBN: 23773766

Source:Mahdi TavakoliviaScopus - Elsevier

An efficient metaheuristic optimization approach to the problem of PID tuning for automatic voltage regulator systems*IEEE/ASME International Conference on Advanced Intelligent Mechatronics, AIM*

2016 | conference-paper

DOI: 10.1109/AIM.2016.7577012

EID: 2-s2.0-84992391752

Source:Mahdi TavakoliviaScopus - Elsevier

An integrator-backstepping control approach for out-of-plane needle deflection minimization*IEEE/ASME International Conference on Advanced Intelligent Mechatronics, AIM*

2016 | conference-paper

DOI: 10.1109/AIM.2016.7576998

EID: 2-s2.0-84992416995

Source:Mahdi TavakoliviaScopus - Elsevier

Characterization of Upper-Limb Pathological Tremors: Application to Design of an Augmented Haptic Rehabilitation System*IEEE Journal on Selected Topics in Signal Processing*

2016 | journal-article

DOI: 10.1109/JSTSP.2016.2530632

EID: 2-s2.0-84982711452

Part of ISBN: 19324553

Source:Mahdi TavakoliviaScopus - Elsevier

Constrained optimal control of needle deflection for semi-manual steering*IEEE/ASME International Conference on Advanced Intelligent Mechatronics, AIM*

2016 | conference-paper

DOI: 10.1109/AIM.2016.7576933

EID: 2-s2.0-84992365504

Source:Mahdi TavakoliviaScopus - Elsevier

Estimating needle tip deflection in biological tissue from a single transverse ultrasound image: application to brachytherapy

International Journal of Computer Assisted Radiology and Surgery

2016 | journal-article

DOI: 10.1007/s11548-015-1329-4

EID: 2-s2.0-84948666880

Part of ISBN: 18616429 18616410

Source:Mahdi TavakoliviaScopus - Elsevier

Generalized Predictive Control of a Surgical Robot for Beating-Heart Surgery under Delayed and Slowly-Sampled Ultrasound Image Data

IEEE Robotics and Automation Letters

2016 | journal-article

DOI: 10.1109/LRA.2016.2530859

EID: 2-s2.0-85058585377

Part of ISBN: 23773766

Source:Mahdi TavakoliviaScopus - Elsevier

Introducing notched flexible needles with increased deflection curvature in soft tissue

IEEE/ASME International Conference on Advanced Intelligent Mechatronics, AIM

2016 | conference-paper

DOI: 10.1109/AIM.2016.7576931

EID: 2-s2.0-84992422394

Source:Mahdi TavakoliviaScopus - Elsevier

Kinematic bilateral teleoperation of wheeled mobile robots subject to longitudinal slippage

IET Control Theory and Applications

2016 | journal-article

DOI: 10.1049/iet-cta.2015.0229

EID: 2-s2.0-84954243000

Part of ISBN: 17518652 17518644

Source:Mahdi TavakoliviaScopus - Elsevier

Mechanics of Tissue Cutting during Needle Insertion in Biological Tissue

IEEE Robotics and Automation Letters

2016 | journal-article

DOI: 10.1109/LRA.2016.2528301

EID: 2-s2.0-85058585275

Part of ISBN: 23773766

Source:Mahdi TavakoliviaScopus - Elsevier

Multiactuator Haptic Feedback on the Wrist for Needle Steering Guidance in Brachytherapy

IEEE Robotics and Automation Letters

2016 | journal-article

DOI: 10.1109/LRA.2016.2528295

EID: 2-s2.0-85058585291

Part of ISBN: 23773766

Source:Mahdi TavakoliviaScopus - Elsevier

Needle path control during insertion in soft tissue using a force-sensor-based deflection estimator

IEEE/ASME International Conference on Advanced Intelligent Mechatronics, AIM

2016 | conference-paper

DOI: 10.1109/AIM.2016.7576929

EID: 2-s2.0-84992390853

Source:Mahdi TavakoliviaScopus - Elsevier

Nonlinear trilateral teleoperation stability analysis subjected to time-varying delays

Control Engineering Practice

2016 | journal-article

DOI: 10.1016/j.conengprac.2016.08.004

EID: 2-s2.0-84985011844

Part of ISBN: 09670661

Source:Mahdi TavakoliviaScopus - Elsevier

Partial estimation of needle tip orientation in generalized coordinates in ultrasound image-guided needle insertion

IEEE/ASME International Conference on Advanced Intelligent Mechatronics, AIM

2016 | conference-paper

DOI: 10.1109/AIM.2016.7576999

EID: 2-s2.0-84992407837

Source:Mahdi TavakoliviaScopus - Elsevier

Real-time needle shape prediction in soft-tissue based on image segmentation and particle filtering

IEEE/ASME International Conference on Advanced Intelligent Mechatronics, AIM

2016 | conference-paper

DOI: 10.1109/AIM.2016.7576934

EID: 2-s2.0-84992313525

Source:Mahdi TavakoliviaScopus - Elsevier

Robotics-assisted mirror rehabilitation therapy: A therapist-in-the-loop assist-as-needed architecture

IEEE/ASME Transactions on Mechatronics

2016 | journal-article

DOI: 10.1109/TMECH.2016.2551725

EID: 2-s2.0-84978708672

Part of ISBN: 10834435

Source:Mahdi TavakoliviaScopus - Elsevier

Sliding-Based Switching Control for Image-Guided Needle Steering in Soft Tissue

IEEE Robotics and Automation Letters

2016 | journal-article

DOI: 10.1109/LRA.2016.2528293

EID: 2-s2.0-85058585388

Part of ISBN: 23773766

Source:Mahdi TavakoliviaScopus - Elsevier

Stable kinematic teleoperation of wheeled mobile robots with slippage using time-domain passivity control*Mechatronics*

2016 | journal-article

DOI: 10.1016/j.mechatronics.2016.05.005

EID: 2-s2.0-84973562564

Part of ISBN: 09574158

Source:Mahdi TavakoliviaScopus - Elsevier

Three-Dimensional Needle Shape Estimation in TRUS-Guided Prostate Brachytherapy Using 2-D Ultrasound Images*IEEE Journal of Biomedical and Health Informatics*

2016 | journal-article

DOI: 10.1109/JBHI.2015.2477829

EID: 2-s2.0-85017111939

Part of ISBN: 21682194

Source:Mahdi TavakoliviaScopus - Elsevier

Trilateral Predictor-Mediated Teleoperation of a Wheeled Mobile Robot with Slippage*IEEE Robotics and Automation Letters*

2016 | journal-article

DOI: 10.1109/LRA.2016.2522503

EID: 2-s2.0-85058585383

Part of ISBN: 23773766

Source:Mahdi TavakoliviaScopus - Elsevier

User's task performance in two-handed complementary-motion teleoperation*Proceedings - IEEE International Conference on Robotics and Automation*

2016 | conference-paper

DOI: 10.1109/ICRA.2016.7487429

EID: 2-s2.0-84977470926

Part of ISBN: 10504729

Source:Mahdi TavakoliviaScopus - Elsevier

Bilateral teleoperation system stability with non-passive and strictly passive operator or environment*Control Engineering Practice*

2015-07 | journal-article

DOI: 10.1016/j.conengprac.2015.03.004

Source:Crossref

3D shape visualization of curved needles in tissue from 2D ultrasound images using RANSAC*Proceedings - IEEE International Conference on Robotics and Automation*

2015 | conference-paper

DOI: 10.1109/ICRA.2015.7139855

EID: 2-s2.0-84938248772

Part of ISBN: 10504729

Source:Mahdi TavakoliviaScopus - Elsevier

A comparison of US-versus MR-based 3-D prostate shapes using radial basis function interpolation and statistical shape models*IEEE Journal of Biomedical and Health Informatics*

2015 | journal-article

DOI: 10.1109/JBHI.2014.2324975

EID: 2-s2.0-84924692166

Part of ISBN: 21682194

Source:Mahdi TavakoliviaScopus - Elsevier

A mechanics-based model for simulation and control of flexible needle insertion in soft tissue*Proceedings - IEEE International Conference on Robotics and Automation*

2015 | conference-paper

DOI: 10.1109/ICRA.2015.7139499

EID: 2-s2.0-84938224652

Part of ISBN: 10504729

Source:Mahdi TavakoliviaScopus - Elsevier

A new passivity-based control technique for safe patient-robot interaction in haptics-enabled rehabilitation systems*IEEE International Conference on Intelligent Robots and Systems*

2015 | conference-paper

DOI: 10.1109/IROS.2015.7354025

EID: 2-s2.0-84958231369

Part of ISBN: 21530866 21530858

Source:Mahdi TavakoliviaScopus - Elsevier

A virtual sensor for needle deflection estimation during soft-tissue needle insertion*Proceedings - IEEE International Conference on Robotics and Automation*

2015 | conference-paper

DOI: 10.1109/ICRA.2015.7139346

EID: 2-s2.0-84938270066

Part of ISBN: 10504729

Source:Mahdi TavakoliviaScopus - Elsevier

Digital versus analog control of bilateral teleoperation systems: A task performance comparison*Control Engineering Practice*

2015 | journal-article

DOI: 10.1016/j.conengprac.2015.01.008

EID: 2-s2.0-84923090829

Part of ISBN: 09670661

Source:Mahdi TavakoliviaScopus - Elsevier

Extended bicycle model for needle steering in soft tissue*IEEE International Conference on Intelligent Robots and Systems*

2015 | conference-paper

DOI: 10.1109/IROS.2015.7353998

EID: 2-s2.0-84958149762

Part of ISBN: 21530866 21530858

Source:Mahdi TavakoliviaScopus - Elsevier

Needle shape estimation in soft tissue based on partial ultrasound image observation*Proceedings - IEEE International Conference on Robotics and Automation*

2015 | conference-paper

DOI: 10.1109/ICRA.2015.7139501

EID: 2-s2.0-84938226714

*Part of ISBN: 10504729***Source:**Mahdi Tavakoli via Scopus - Elsevier**Nonlinear discontinuous dynamics averaging and pwm-based sliding control of solenoid-valve pneumatic actuators***IEEE/ASME Transactions on Mechatronics*

2015 | journal-article

DOI: 10.1109/TMECH.2014.2326601

EID: 2-s2.0-84908412743

*Part of ISBN: 10834435***Source:**Mahdi Tavakoli via Scopus - Elsevier**Passivity and Absolute Stability Analyses of Trilateral Haptic Collaborative Systems***Journal of Intelligent and Robotic Systems: Theory and Applications*

2015 | journal-article

DOI: 10.1007/s10846-014-0049-2

EID: 2-s2.0-84925290897

*Part of ISBN: 15730409 09210296***Source:**Mahdi Tavakoli via Scopus - Elsevier**Position and force tracking in nonlinear teleoperation systems under varying delays***Robotica*

2015 | journal-article

DOI: 10.1017/S026357471400068X

EID: 2-s2.0-84929131704

*Part of ISBN: 14698668 02635747***Source:**Mahdi Tavakoli via Scopus - Elsevier**Therapist-in-the-Loop robotics-assisted mirror rehabilitation therapy: An Assist-as-Needed framework***Proceedings - IEEE International Conference on Robotics and Automation*

2015 | conference-paper

DOI: 10.1109/ICRA.2015.7140027

EID: 2-s2.0-84938281531

*Part of ISBN: 10504729***Source:**Mahdi Tavakoli via Scopus - Elsevier**A method for passivity analysis of multilateral haptic systems***Advanced Robotics*

2014 | journal-article

DOI: 10.1080/01691864.2014.913500

EID: 2-s2.0-84905514437

*Part of ISBN: 15685535 01691864***Source:**Mahdi Tavakoli via Scopus - Elsevier

Absolute stability of a class of trilateral haptic systems*IEEE Transactions on Haptics*

2014 | journal-article

DOI: 10.1109/TOH.2014.2321616

EID: 2-s2.0-84907551619

Part of ISBN: 19391412**Source:**Mahdi TavakoliviaScopus - Elsevier**Absolute stability of multi-DOF multilateral haptic systems***IEEE Transactions on Control Systems Technology*

2014 | journal-article

DOI: 10.1109/TCST.2014.2301840

EID: 2-s2.0-84908229103

Part of ISBN: 10636536**Source:**Mahdi TavakoliviaScopus - Elsevier**Adaptive control of uncertain nonlinear teleoperation systems***Mechatronics*

2014 | journal-article

DOI: 10.1016/j.mechatronics.2013.11.010

EID: 2-s2.0-84892981378

Part of ISBN: 09574158**Source:**Mahdi TavakoliviaScopus - Elsevier**Advances towards beating heart surgery***Minimally Invasive Surgery: Evolution of Operative Techniques, Safety &**Effectiveness and Long-Term Clinical Outcomes*

2014 | book-chapter

EID: 2-s2.0-84948746343

Source:Mahdi TavakoliviaScopus - Elsevier**Dynamical model averaging and PWM based control for pneumatic actuators***Proceedings - IEEE International Conference on Robotics and Automation*

2014 | conference-paper

DOI: 10.1109/ICRA.2014.6907561

EID: 2-s2.0-84929224244

Part of ISBN: 10504729**Source:**Mahdi TavakoliviaScopus - Elsevier**Dynamical modeling and controllability analysis of a flexible needle in soft tissue***International Journal of Modeling, Simulation, and Scientific Computing*

2014 | journal-article

DOI: 10.1142/S1793962313500311

EID: 2-s2.0-84897115362

Part of ISBN: 17939615 17939623**Source:**Mahdi TavakoliviaScopus - Elsevier

GPC-based teleoperation for delay compensation and disturbance rejection in image-guided beating-heart surgery

Proceedings - IEEE International Conference on Robotics and Automation

2014 | conference-paper

DOI: 10.1109/ICRA.2014.6907573

EID: 2-s2.0-84929224439

Part of ISBN: 10504729

Source:Mahdi TavakoliviaScopus - Elsevier

Hand haptic perception

Springer Tracts in Advanced Robotics

2014 | book-chapter

DOI: 10.1007/978-3-319-03017-3_9

EID: 2-s2.0-84926642406

Part of ISBN: 1610742X 16107438

Source:Mahdi TavakoliviaScopus - Elsevier

High-fidelity sliding mode control of a pneumatic haptic teleoperation system

Advanced Robotics

2014 | journal-article

DOI: 10.1080/01691864.2014.888130

EID: 2-s2.0-84900491372

Part of ISBN: 15685535 01691864

Source:Mahdi TavakoliviaScopus - Elsevier

Multilateral haptic system stability analysis: The effect of activity or passivity of terminations via a series-shunt approach

IEEE Haptics Symposium, HAPTICS

2014 | conference-paper

DOI: 10.1109/HAPTICS.2014.6775455

EID: 2-s2.0-84899526705

Part of ISBN: 23247355 23247347

Source:Mahdi TavakoliviaScopus - Elsevier

Smith predictor-based robot control for ultrasound-guided teleoperated beating-heart surgery

IEEE Journal of Biomedical and Health Informatics

2014 | journal-article

DOI: 10.1109/JBHI.2013.2267494

EID: 2-s2.0-84892603682

Part of ISBN: 21682194

Source:Mahdi TavakoliviaScopus - Elsevier

Stability of cooperative teleoperation using haptic devices with complementary degrees of freedom

IET Control Theory and Applications

2014 | journal-article

DOI: 10.1049/iet-cta.2013.0522

EID: 2-s2.0-84905462599

Part of ISBN: 17518652 17518644

Source:Mahdi TavakoliviaScopus - Elsevier

Stability of sampled-data, delayed haptic interaction and teleoperation*IEEE Haptics Symposium, HAPTICS*

2014 | conference-paper

DOI: 10.1109/HAPTICS.2014.6775457

EID: 2-s2.0-84899524884

*Part of ISBN: 23247355 23247347***Source:**Mahdi TavakoliviaScopus - Elsevier**Stability of sampled-data, delayed haptic interaction under passive or active operator***IET Control Theory and Applications*

2014 | journal-article

DOI: 10.1049/iet-cta.2013.0908

EID: 2-s2.0-84917743288

*Part of ISBN: 17518652 17518644***Source:**Mahdi TavakoliviaScopus - Elsevier**3-DOF trilateral teleoperation using a pair of 1-DOF and 2-DOF haptic devices: Stability analysis***IFAC Proceedings Volumes (IFAC-PapersOnline)*

2013 | conference-paper

DOI: 10.3182/20130902-3-CN-3020.00069

EID: 2-s2.0-84896378558

*Part of ISBN: 14746670***Source:**Mahdi TavakoliviaScopus - Elsevier**A passivity criterion for sampled-data bilateral teleoperation systems***IEEE Transactions on Haptics*

2013 | journal-article

DOI: 10.1109/TOH.2012.73

EID: 2-s2.0-84883800117

*Part of ISBN: 19391412***Source:**Mahdi TavakoliviaScopus - Elsevier**Absolute stability analysis of sampled-data scaled bilateral teleoperation systems***Control Engineering Practice*

2013 | journal-article

DOI: 10.1016/j.conengprac.2013.04.002

EID: 2-s2.0-84882631924

*Part of ISBN: 09670661***Source:**Mahdi TavakoliviaScopus - Elsevier**Absolute stability of 3-DOF bilateral haptic systems***IFAC Proceedings Volumes (IFAC-PapersOnline)*

2013 | conference-paper

DOI: 10.3182/20130902-3-CN-3020.00068

EID: 2-s2.0-84896383973

*Part of ISBN: 14746670***Source:**Mahdi TavakoliviaScopus - Elsevier

Bilateral control of nonlinear pneumatic teleoperation system with solenoid valves*IEEE Transactions on Control Systems Technology*

2013 | journal-article

DOI: 10.1109/TCST.2012.2205386

EID: 2-s2.0-84879900670

Source:Mahdi TavakoliviaScopus - Elsevier**Conservatism of passivity criteria for stability analysis of trilateral haptic systems***2013 World Haptics Conference, WHC 2013*

2013 | conference-paper

DOI: 10.1109/WHC.2013.6548482

EID: 2-s2.0-84881404191

Source:Mahdi TavakoliviaScopus - Elsevier**Force-Sensor-Based Estimation of Needle Tip Deflection in Brachytherapy***Journal of Sensors*

2013 | journal-article

DOI: 10.1155/2013/263153

Source:Crossref**Haptic teleoperation under variable delay and actuator saturation***2013 World Haptics Conference, WHC 2013*

2013 | conference-paper

DOI: 10.1109/WHC.2013.6548438

EID: 2-s2.0-84881466269

Source:Mahdi TavakoliviaScopus - Elsevier**Introduction to haptics for neurosurgeons***Neurosurgery*

2013 | journal-article

DOI: 10.1227/NEU.0b013e318273a1a3

Source:Mahdi TavakoliviaScopus - Elsevier**Is the human operator in a teleoperation system passive***2013 World Haptics Conference, WHC 2013*

2013 | conference-paper

DOI: 10.1109/WHC.2013.6548491

EID: 2-s2.0-84881397557

Source:Mahdi TavakoliviaScopus - Elsevier**Measuring the dynamic impedance of the human arm without a force sensor***IEEE International Conference on Rehabilitation Robotics*

2013 | conference-paper

DOI: 10.1109/ICORR.2013.6650349

EID: 2-s2.0-84891089080

Part of ISBN: 19457898 19457901**Source:**Mahdi TavakoliviaScopus - Elsevier

Nonlinear disturbance observer design for robotic manipulators*Control Engineering Practice*

2013 | journal-article

DOI: 10.1016/j.conengprac.2012.10.008

Source:Mahdi TavakoliviaScopus - Elsevier

Smith predictor based control in teleoperated image-guided beating-heart surgery*Proceedings - IEEE International Conference on Robotics and Automation*

2013 | conference-paper

DOI: 10.1109/ICRA.2013.6631415

EID: 2-s2.0-84887306635

Part of ISBN: 10504729

Source:Mahdi TavakoliviaScopus - Elsevier

Stability analysis of delayed 4-channel bilateral teleoperation systems*2013 World Haptics Conference, WHC 2013*

2013 | conference-paper

DOI: 10.1109/WHC.2013.6548494

EID: 2-s2.0-84881456508

Source:Mahdi TavakoliviaScopus - Elsevier

Stability analysis of teleoperation systems under strictly passive and non-passive operator*2013 World Haptics Conference, WHC 2013*

2013 | conference-paper

DOI: 10.1109/WHC.2013.6548493

EID: 2-s2.0-84881452589

Source:Mahdi TavakoliviaScopus - Elsevier

Stability analysis of trilateral haptic collaboration*2013 World Haptics Conference, WHC 2013*

2013 | conference-paper

DOI: 10.1109/WHC.2013.6548478

EID: 2-s2.0-84881442177

Source:Mahdi TavakoliviaScopus - Elsevier

Teleoperation in the presence of varying time delays and sandwich linearity in actuators*Automatica*

2013 | journal-article

DOI: 10.1016/j.automatica.2013.05.012

EID: 2-s2.0-84881478972

Part of ISBN: 00051098

Source:Mahdi TavakoliviaScopus - Elsevier

A new method for bilateral teleoperation passivity under varying time delays*Mathematical Problems in Engineering*

2012 | journal-article

DOI: 10.1155/2012/792057

Source:Mahdi TavakoliviaScopus - Elsevier

Adaptive control for state synchronization of nonlinear haptic telerobotic systems with asymmetric varying time delays*Journal of Intelligent and Robotic Systems: Theory and Applications*

2012 | journal-article

DOI: 10.1007/s10846-012-9678-5

Source:Mahdi TavakoliviaScopus - Elsevier

Adaptive control of nonlinear teleoperation systems with varying asymmetric time delays*IEEE International Conference on Intelligent Robots and Systems*

2012 | conference-paper

DOI: 10.1109/IROS.2012.6385478

EID: 2-s2.0-84872301764

Source:Mahdi TavakoliviaScopus - Elsevier

Adaptive control of teleoperation systems with linearly and nonlinearly parameterized dynamic uncertainties*Journal of Dynamic Systems, Measurement and Control, Transactions of the ASME*

2012 | journal-article

DOI: 10.1115/1.4005049

Source:Mahdi TavakoliviaScopus - Elsevier

Control of a teleoperation system actuated by low-cost pneumatic on/off valves*IEEE International Conference on Intelligent Robots and Systems*

2012 | conference-paper

DOI: 10.1109/IROS.2012.6385697

EID: 2-s2.0-84872300232

Source:Mahdi TavakoliviaScopus - Elsevier

Control of nonlinear teleoperation systems subject to disturbances and variable time delays*IEEE International Conference on Intelligent Robots and Systems*

2012 | conference-paper

DOI: 10.1109/IROS.2012.6385461

EID: 2-s2.0-84872303729

Source:Mahdi TavakoliviaScopus - Elsevier

Revisiting Llewellyn's absolute stability criterion for bilateral teleoperation systems under non-passive operator or environment*IEEE International Conference on Intelligent Robots and Systems*

2012 | conference-paper

DOI: 10.1109/IROS.2012.6385949

EID: 2-s2.0-84872327521

Source:Mahdi TavakoliviaScopus - Elsevier

Sliding-mode bilateral teleoperation control design for master-slave pneumatic servo systems*Control Engineering Practice*

2012 | journal-article

DOI: 10.1016/j.conengprac.2012.02.003

Source:Mahdi TavakoliviaScopus - Elsevier

Towards delayed teleoperation with pneumatic master and slave for MRI

ASME 2012 11th Biennial Conference on Engineering Systems Design and Analysis, ESDA 2012

2012 | conference-paper

DOI: 10.1115/ESDA2012-82782

EID: 2-s2.0-84883879485

Source:Mahdi TavakoliviaScopus - Elsevier

A passivity criterion for sampled-data bilateral teleoperation systems

2011 IEEE World Haptics Conference, WHC 2011

2011 | conference-paper

DOI: 10.1109/WHC.2011.5945534

EID: 2-s2.0-79961180021

Source:Mahdi TavakoliviaScopus - Elsevier

Adaptive control for linearly and nonlinearly parameterized dynamic uncertainties in bilateral teleoperation systems

Proceedings - IEEE International Conference on Robotics and Automation

2011 | conference-paper

DOI: 10.1109/ICRA.2011.5979592

EID: 2-s2.0-84871676300

Source:Mahdi TavakoliviaScopus - Elsevier

Adaptive inverse dynamics four-channel control of uncertain nonlinear teleoperation systems

Advanced Robotics

2011 | journal-article

DOI: 10.1163/016918611X584668

Source:Mahdi TavakoliviaScopus - Elsevier

An enhanced sliding-mode control for a pneumatic-actuated teleoperation system

IEEE International Conference on Intelligent Robots and Systems

2011 | conference-paper

DOI: 10.1109/IROS.2011.6048047

EID: 2-s2.0-84455169234

Source:Mahdi TavakoliviaScopus - Elsevier

Control of nonlinear bilateral teleoperation systems subject to disturbances

Proceedings of the IEEE Conference on Decision and Control

2011 | conference-paper

DOI: 10.1109/CDC.2011.6160185

EID: 2-s2.0-84860659749

Source:Mahdi TavakoliviaScopus - Elsevier

Disturbance observer-based control of non-linear haptic teleoperation systems

IET Control Theory and Applications

2011 | journal-article

DOI: 10.1049/iet-cta.2010.0517

Source:Mahdi TavakoliviaScopus - Elsevier

Improved tracking and switching performance of an electro-pneumatic positioning system*Mechatronics*

2011 | journal-article

DOI: 10.1016/j.mechatronics.2011.10.007

Source:Mahdi TavakoliviaScopus - Elsevier

Inverse dynamics-based adaptive control of nonlinear bilateral teleoperation systems*Proceedings - IEEE International Conference on Robotics and Automation*

2011 | conference-paper

DOI: 10.1109/ICRA.2011.5979591

EID: 2-s2.0-84871675042

Source:Mahdi TavakoliviaScopus - Elsevier

Performance analysis of a haptic telemanipulation task under time delay*Advanced Robotics*

2011 | journal-article

DOI: 10.1163/016918611X558216

Source:Mahdi TavakoliviaScopus - Elsevier

Sliding mode control of a pneumatic haptic teleoperation system with on/off solenoid valves*Proceedings - IEEE International Conference on Robotics and Automation*

2011 | conference-paper

DOI: 10.1109/ICRA.2011.5979610

EID: 2-s2.0-84455161677

Source:Mahdi TavakoliviaScopus - Elsevier

Sliding-mode control of nonlinear discrete-input pneumatic actuators*IEEE International Conference on Intelligent Robots and Systems*

2011 | conference-paper

DOI: 10.1109/IROS.2011.6048194

EID: 2-s2.0-84455200971

Source:Mahdi TavakoliviaScopus - Elsevier

A passivity criterion for N-port multilateral haptic systems*Proceedings of the IEEE Conference on Decision and Control*

2010 | conference-paper

DOI: 10.1109/CDC.2010.5717326

EID: 2-s2.0-79953135846

Source:Mahdi TavakoliviaScopus - Elsevier

Development of a hybrid control for a pneumatic teleoperation system using on/off solenoid valves*IEEE/RSJ 2010 International Conference on Intelligent Robots and Systems,**IROS 2010 - Conference Proceedings*

2010 | conference-paper

DOI: 10.1109/IROS.2010.5650406

EID: 2-s2.0-78651517832

Source:Mahdi TavakoliviaScopus - Elsevier

Nonlinear adaptive bilateral control of teleoperation systems with uncertain dynamics and kinematics

IEEE/RSJ 2010 International Conference on Intelligent Robots and Systems, IROS 2010 - Conference Proceedings

2010 | conference-paper

DOI: 10.1109/IROS.2010.5652345

EID: 2-s2.0-78651488802

Source:Mahdi Tavakoli via Scopus - Elsevier

Performance analysis of a manipulation task in time-delayed teleoperation

IEEE/RSJ 2010 International Conference on Intelligent Robots and Systems, IROS 2010 - Conference Proceedings

2010 | conference-paper

DOI: 10.1109/IROS.2010.5651279

EID: 2-s2.0-78651519830

Source:Mahdi Tavakoli via Scopus - Elsevier

Stability analysis of sampled-data teleoperation systems

Proceedings of the IEEE Conference on Decision and Control

2010 | conference-paper

DOI: 10.1109/CDC.2010.5718117

EID: 2-s2.0-79953142012

Source:Mahdi Tavakoli via Scopus - Elsevier

Haptic effects of surgical teleoperator flexibility

International Journal of Robotics Research

2009 | journal-article

DOI: 10.1177/0278364909101231

Source:Mahdi Tavakoli via Scopus - Elsevier

Discrete-time bilateral teleoperation: Modelling and stability analysis

IET Control Theory and Applications

2008 | journal-article

DOI: 10.1049/iet-cta:20070195

Source:Mahdi Tavakoli via Scopus - Elsevier

Haptics in telerobotic systems for minimally invasive surgery

Telesurgery

2008 | book-chapter

Part of DOI: 10.1007/978-3-540-72999-0_9

EID: 2-s2.0-70349460546

Source:Mahdi Tavakoli via Scopus - Elsevier

Improving teleoperation performance in the presence of non-ideal robot dynamics

2008 IEEE International Conference on Technologies for Practical Robot Applications, TePRA

2008 | conference-paper

DOI: 10.1109/TEPRA.2008.4686686

EID: 2-s2.0-58049136206

Source:Mahdi Tavakoli via Scopus - Elsevier

Stability and performance in delayed bilateral teleoperation: Theory and experiments*Control Engineering Practice*

2008 | journal-article

DOI: 10.1016/j.conengprac.2008.03.005

Source:Mahdi TavakoliviaScopus - Elsevier**Transparent time-delayed bilateral teleoperation using wave variables***IEEE Transactions on Control Systems Technology*

2008 | journal-article

DOI: 10.1109/TCST.2007.908222

Source:Mahdi TavakoliviaScopus - Elsevier**Bilateral delayed teleoperation: The effects of a passivated channel model and force sensing***Proceedings - IEEE International Conference on Robotics and Automation*

2007 | conference-paper

DOI: 10.1109/ROBOT.2007.364012

EID: 2-s2.0-36349033467

Source:Mahdi TavakoliviaScopus - Elsevier**Enhanced transparency in haptics-based master-slave systems***Proceedings of the American Control Conference*

2007 | conference-paper

DOI: 10.1109/ACC.2007.4283078

EID: 2-s2.0-46449124226

Source:Mahdi TavakoliviaScopus - Elsevier**High-fidelity bilateral teleoperation systems and the effect of multimodal haptics***IEEE Transactions on Systems, Man, and Cybernetics, Part B: Cybernetics*

2007 | journal-article

DOI: 10.1109/TSMCB.2007.903700

Source:Mahdi TavakoliviaScopus - Elsevier**Stability of discrete-time bilateral teleoperation control***IEEE International Conference on Intelligent Robots and Systems*

2007 | conference-paper

DOI: 10.1109/IROS.2007.4399017

EID: 2-s2.0-51349162235

Source:Mahdi TavakoliviaScopus - Elsevier**The effect of joint elasticity on bilateral teleoperation***IEEE International Conference on Intelligent Robots and Systems*

2007 | conference-paper

DOI: 10.1109/IROS.2007.4399332

EID: 2-s2.0-49749083921

Source:Mahdi TavakoliviaScopus - Elsevier

Wave-based time delay compensation in bilateral teleoperation: Two-channel versus four-channel architectures*Proceedings of the American Control Conference*

2007 | conference-paper

DOI: 10.1109/ACC.2007.4283064

EID: 2-s2.0-36749016230

Source:Mahdi Tavakoli via Scopus - Elsevier**A haptic interface for computer-integrated endoscopic surgery and training***Virtual Reality*

2006 | journal-article

DOI: 10.1007/s10055-005-0017-z

Source:Mahdi Tavakoli via Scopus - Elsevier**Bilateral control of a teleoperator for soft tissue palpation: Design and experiments***Proceedings - IEEE International Conference on Robotics and Automation*

2006 | conference-paper

DOI: 10.1109/ROBOT.2006.1642202

EID: 2-s2.0-33845641424

Source:Mahdi Tavakoli via Scopus - Elsevier**Methods and mechanisms for contact feedback in a robot-assisted minimally invasive environment***Surgical Endoscopy and Other Interventional Techniques*

2006 | journal-article

DOI: 10.1007/s00464-005-0582-y

Source:Mahdi Tavakoli via Scopus - Elsevier**Multi-sensory force/deformation cues for stiffness characterization in soft-tissue palpation***Annual International Conference of the IEEE Engineering in Medicine and Biology - Proceedings*

2006 | conference-paper

DOI: 10.1109/IEMBS.2006.260292

EID: 2-s2.0-34047139508

Source:Mahdi Tavakoli via Scopus - Elsevier**Multi-sensory force/deformation cues for stiffness characterization in soft-tissue palpation.***Conference proceedings : ... Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Conference*

2006 | journal-article

EID: 2-s2.0-40949098288

Source:Mahdi Tavakoli via Scopus - Elsevier

Tool/tissue interaction feedback modalities in robot-assisted lump localization

Annual International Conference of the IEEE Engineering in Medicine and Biology - Proceedings

2006 | conference-paper

DOI: 10.1109/IEMBS.2006.260672

EID: 2-s2.0-34047128729

Source:Mahdi TavakoliviaScopus - Elsevier

Tool/tissue interaction feedback modalities in robot-assisted lump localization.

Conference proceedings : ... Annual International Conference of the IEEE Engineering in Medicine and Biology Society. IEEE Engineering in Medicine and Biology Society. Conference

2006 | journal-article

EID: 2-s2.0-40349114656

Source:Mahdi TavakoliviaScopus - Elsevier

Effects of latency on telesurgery: An experimental study

Lecture Notes in Computer Science (including subseries Lecture Notes in Artificial Intelligence and Lecture Notes in Bioinformatics)

2005 | book

DOI: 10.1007/11566489_8

EID: 2-s2.0-33744788660

Source:Mahdi TavakoliviaScopus - Elsevier

Haptic feedback and sensory substitution during telemanipulated suturing

Proceedings - 1st Joint Eurohaptics Conference and Symposium on Haptic Interfaces for Virtual Environment and Teleoperator Systems; World Haptics Conference, WHC 2005

2005 | conference-paper

DOI: 10.1109/WHC.2005.66

EID: 2-s2.0-37549035107

Source:Mahdi TavakoliviaScopus - Elsevier

Haptic interaction in robot-assisted endoscopic surgery: a sensorized end-effector.

The international journal of medical robotics + computer assisted surgery : MRCAS

2005 | journal-article

DOI: 10.1002/rcs.16

Source:Mahdi TavakoliviaScopus - Elsevier

Identification and robust H_{∞} control of the rotational/translational actuator system

International Journal of Control, Automation and Systems

2005 | journal-article

EID: 2-s2.0-24744471020

Source:Mahdi TavakoliviaScopus - Elsevier

Design issues in a haptics-based master-slave system for minimally invasive surgery*Proceedings - IEEE International Conference on Robotics and Automation*

2004 | conference-paper

EID: 2-s2.0-3042621804

Source:Mahdi TavakoliviaScopus - Elsevier**A Force Reflective Master-Slave System for Minimally Invasive Surgery***IEEE International Conference on Intelligent Robots and Systems*

2003 | conference-paper

EID: 2-s2.0-0346148589

Source:Mahdi TavakoliviaScopus - Elsevier**Optimal tuning of PID controllers for first order plus time delay models using dimensional analysis***International Conference on Control and Automation*

2003 | conference-paper

EID: 2-s2.0-20544474388

Source:Mahdi TavakoliviaScopus - Elsevier**Parametric and nonparametric identification and robust control of a rotational/translational actuator***International Conference on Control and Automation*

2003 | conference-paper

EID: 2-s2.0-24344469741

Source:Mahdi TavakoliviaScopus - Elsevier*Record last modified Jun 22, 2020 3:36:21 AM*