

Friendship, Leadership, and Scholarship in Australian Slang

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BobFest

Career with Cheer: Robert Witmead's Legacy of Control and Selflessness

Bob the Leader

University of California San Diego, June 8, 2024

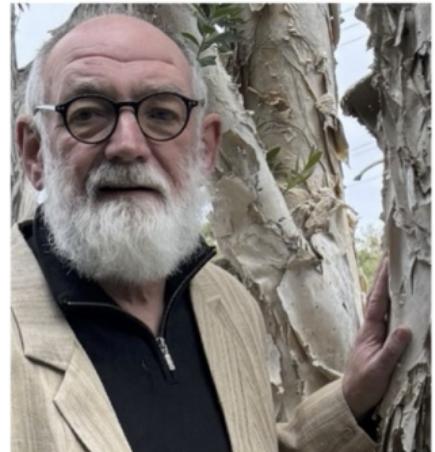
SEMINAR

UNIVERSITY OF CALIFORNIA, SAN DIEGO
MECHANICAL & AEROSPACE ENGINEERING

**Data-Driven Control Design People. You're Just No Fun
Anymore!**

Dr. Bitmead, Robert R.

*University of California, San Diego
Department of Mechanical Aerospace Engineering*



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Data-Driven Resilient Predictive Control Under Denial-of-Service

Wenjie Liu , Jian Sun , Senior Member, IEEE, Gang Wang , Member, IEEE,
Francesco Bullo , Fellow, IEEE, and Jie Chen , Fellow, IEEE

Abstract—The study of resilient control of linear time-invariant (LTI) systems against denial-of-service (DoS) attacks is gaining popularity in emerging cyber-physical applications. In previous works, explicit system models are required to design a predictor-based resilient controller. These models can be either given a priori or obtained through a prior system identification step. Recently, much effort has been focused on data-driven controllers based on pre-collected input–output trajectories (i.e., without explicit sys-

I. INTRODUCTION

THANKS to recent advances in computing and networking technologies, recent years have witnessed rapid developments in cyber-physical systems (CPSs), e.g., [1], [2], [3], [4], [5], [6]. Nonetheless, it has been reported that such systems are often vulnerable to cyber-attacks [7], [8], including false-data injection attacks [9], [10], replay attacks [11], and denial-of-



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6951

Data-Driven Self-Triggered Control via Trajectory Prediction

Wenjie Liu , Jian Sun , Senior Member, IEEE, Gang Wang , Member, IEEE,
Francesco Bullo , Fellow, IEEE, and Jie Chen , Fellow, IEEE

Abstract—Self-triggered control, a well-documented technique for reducing the communication overhead while ensuring desired system performance, is gaining increasing popularity. However, a majority of existing self-triggered control methods require explicit system models. An end-to-end control paradigm known as data-driven control designs control laws directly from data and offers a competing alternative to the routine system identification–then–control strategy. In this context, the present article puts forth data-driven self-triggered control schemes for unknown linear systems using input–output data collected offline. Specifically, a data-

proposed, including e.g., reinforcement learning-based control [3], model-free control [4], and extremum seeking control [5]. More results on data-driven control can be found in [6]. Most recently, the result of fundamental lemma in [7] has attracted reviving interest. This lemma provides a nonparametric representation of a linear time-invariant system using a trajectory of the system. Inspired by this work, a number of applications and generalizations have been made, including stabilization and optimization [8], [9], [10], linear quadratic regulation [11],

Jan and Bob The Hosts
July 4, 2007

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July 4, 2007

Bob The Master of Ceremony
May 28, 2009

Bob The Leader

IEEE CSS Vice-President for Financial Activities 2015-16

President Elect in 2018, President 2019, and President Past 2020

Taipei, oct 2017, ExCom meeting



Como, may 2018, ExCom meeting



UC Irvine, oct 2018, ExCom meeting, reception at Tryphon's house



Reykjavik, may 2019, ExCom meeting



Miami Beach, dec 2018 — finally coming into CSS absolute power



About the IEEE CSS Presidential Gavel



Exchanging ceremononial pins

About the IEEE CSS Presidential Gavel



Bob happy with his new toy

About the IEEE CSS Presidential Gavel



looking at the precious gavel one last time

About the IEEE CSS Presidential Gavel



Bob defending his gavel

About the IEEE CSS Presidential Gavel



Bob giving me a fake one



**No Image
Available**

Bob passing on his gavel to Anu

In reverse importance order:

- ① IEEE Open Journal of Control Systems
- ② L-CSS for American Control Conference
- ③ IEEE Control Systems Society Fund
- ④ Two-year CSS presidency
- ⑤ ...



deep respect and gratitude

deep respect and gratitude

**But ... don't be fooled ... appearances can be deceiving
and not all that glitters is gold**

deep respect and gratitude

**But ... don't be fooled ... appearances can be deceiving
and not all that glitters is gold**

strine = the English language as spoken by Australians

selected highlights

- ① clayton
- ② the dingo's breakfast
- ③ drinking lizards

» PRESIDENT'S MESSAGE

A Clayton's Regime Change

Clayton's is "the drink" you have when you are not having "a drink." It is a nonalcoholic drink base or cordial. The expression comes

eral countries with highly divergent organizations, such as academia, many industry sectors, government, and defense laboratories. This experience

rigorous downbeat reviews given to grant proposals within the control area were perceived as symptomatic of a field in decline. Look at us now!

PRESIDENT'S MESSAGE <>

Does Plan S Serve the IEEE Control Systems Society the Dingo's Breakfast?

Plan S is a drive toward open access (OA) scientific publishing from cOAlition S, a consortium of

control of a process without a full enunciation of exactly what that entails: notably, economically in the long

years ago. These ventures have been financially successful so far. The IEEE has also developed a coordinated ac-

PRESIDENT'S MESSAGE <>

... Like a Lizard Drinking

The governance side of the IEEE Control Systems Society (CSS) is where the administrative CSS

Why bring this up now, when we could have skipped to the funnies inside the back cover? Well, at the time of writ-

and initiatives run by the volunteers. The interface with the IEEE also falls to the ExCom, which serve as conduits



Happy birthday and congratulations!