電気工学特別講義
2020年6月10日分
イントロダクション

OU EE ES Lecture Series

June 10, 2020

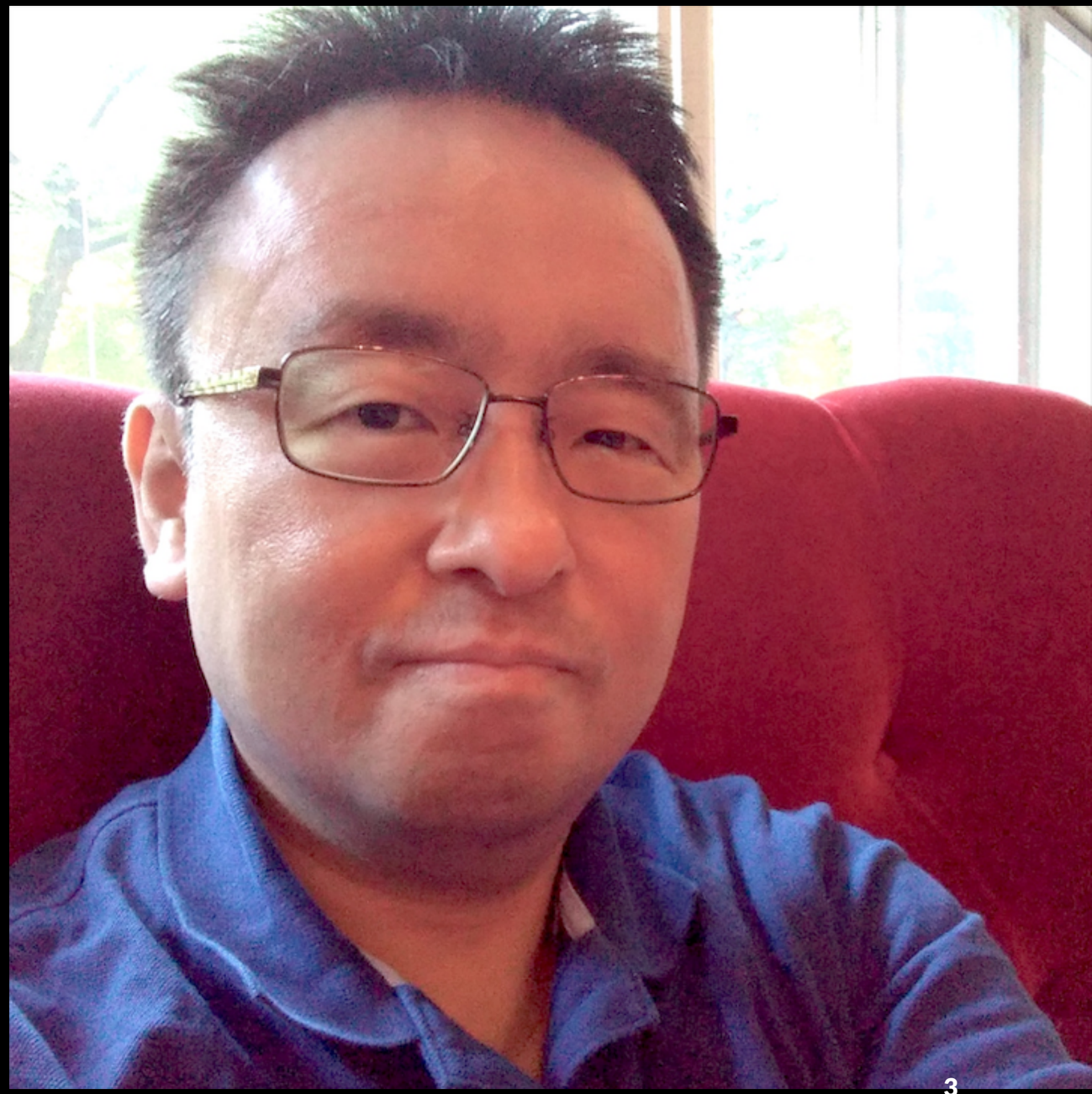
Lecture introduction

Kenji Rikitake

りきたけ けんじ

力武 健次

10-JUN-2020
School of Engineering Science
Osaka University
On the internet
@jj1bdx



CAUTION

Osaka University School of Engineering Science prohibits copying/redistribution of the lecture series video/audio files used in this lecture series.

大阪大学基礎工学部からの要請により、本講義で使用するビデオ/音声ファイルの複製や再配布は禁止されています。

COVID-19 has changed everything

The Digital Divide has become irrelevant

The Physical Divide

The Physical Divide [1]

Digital is now cheap, it's physical that is expensive.
70 years ago the cost of putting a bunch of transistors on a chip was astronomical. Now that’s cheap. What’s expensive is putting a bunch of people in a room.

— Balaji S. Srinivasan

[1] https://twitter.com/balajis/status/1247518697385684992?lang=en

Digital-first society has come
Internet is infrastructure
Software builds the world

In the meanwhile:
Oppressions everywhere by people with power to enslave oppressed people


BLACK LIVES MATTER
THE NEW 42ND STREET
DESTINY 2016
RISE UP!

Safety first

Stay alive

Don't be a slave

Who I am
自己紹介

Professional Internet Engineer

技術士（情報工学部門）
力武健次技術士事務所 所長
情報処理安全確保支援士

Guest Researcher
Pepabo R&D Institute
GMO Pepabo, Inc.
GMOペパボ株式会社
ペパボ研究所 客員研究員

ペパボ研究所
Pepabo R&D Institute, GMO Pepabo, Inc.

My career

Erlang, Elixir, C, FreeBSD, Linux, TCP/IP, PHP, mruby, Lua, C++, C#, Visual Studio, Moodle, macOS, Windows, Vim, Emacs, Arduino, AVR, radio, music, distributed systems, fault tolerance, software defined radio, whatever.

30 years in Computer Science, 15 years since PhD, 44 years of ham radio op as @jj1bdx, 2010-2012: Professor, ACCMS/IIMC, Kyoto University, whatever.

Past records are meaningless, unless:
you work on what you really want to do now

Ignore past achievements

Focus on *now*

Lecture theme:
Information delivery on internet
In other words: how internet works

容錯設計

Fault-tolerant design

Modern life is full of failures

How internet works under failures?

Technology 1:
Packet switching

Technology 2:
Flexible packet routing

Technology 3:

Centralization, and: decentralization

Topic sections (1/2)

- Centralized communication
- Multiplexing
- Packet switching
- Routing basics
- IP addresses
- Routing in details

Topic sections (2/2)

- Network transports
- Cloud computing basics
- Social implication of cloud computing
- Network fault-tolerance
- Reference books
- Career choice

Summary:

Divide data into packets
Route flexibly and wisely
Decentralize and distribute

OK let's get down to business!

Picture credits:

- Black Lives Matter: Nicole Baster, from Unsplash, https://unsplash.com/photos/6_y5Sww0-h4