加速するAI:
もうすぐそこに来ているディスラプション：
—トランプ政権下の社会ロジックを踏まえて日本のチャンスと課題を模索—

講師 櫛田 健児 氏

イントロダクション

2017年2月28日

栗原 潤
キヤノングローバル戦略研究所 研究主幹）
Kurihara.Jun@gmail.com

Today's Workshop: Program

開会・イントロダクション
栗原 潤 (キヤノングローバル戦略研究所 研究主幹)

I: 講演
加速するAI: もうすぐそこに来ているディスラプション：
—トランプ政権下の社会ロジックを踏まえて日本のチャンスと課題を模索—
櫛田 健児
(米国スタンフォード大学アジア太平洋研究所リサーチアソシエート、
キヤノングローバル戦略研究所 International Research Fellow)

II: 討論
司会：栗原 潤（キヤノングローバル戦略研究所 研究主幹）

閉会
総括：栗原 潤（キヤノングローバル戦略研究所 研究主幹）

Discussion

I: 加速するAI

I.1 倍々ゲームは続く

I.1.1 シリコンバレーの仕組み: Closed & Open Innovationの巧みなバランス
I.1.2 Google vs Microsoft/Yahoo
I.1.3 ハドゥープの登場とそのインパクト
I.1.4 AIの登場とAI研究者のSkyrocketing Prices
I.1.5 Exponential Growthの凄まじさ/情報処理能力の驚異的向上

I.2 シロモノAIの時代

I.2.1 「無駄遣い」が許容される時代に?
I.2.2 シロモノ家電ならぬシロモノAI
I.2.3 応用分野: メディア、金融、そしてIoT

Discussion

II: 米国新政権下のAIインプレメンテーションの課題

II.1 政治力学と政策

II.1.1 米国新政権
II.1.2 カルフォルニアに対するBarrage of Malicious Twitter Attacks
II.1.3 規制緩和と規制強化、連邦政府 vs 州政府
II.1.4 AIと雇用
II.1.5 新政権の不安定要素

II.2 AI研究とインプレメンテーションの方向性への懸念

II.2.1 世界中から人的資源が集まるSilicon Valleyと蓄積される富
II.2.2 新政権と今後のSilicon Valley

III: 日本のチャンス
政策議論が米国の真逆

III.1 人手不足問題
III.2 Human Machine Interface (MHI)に関するデータ
III.3 政府のサポート
III.4 Boom, Hype, Buzzwords
III. 5 製造職場・職人というデータ資源

Discussion: Recent References

I: AIの将来: 明るい?

①高まる自動車運転の安全性

United States Government, Office of Defects Investigation (ODI), National Highway Traffic Safety Administration (NHTSA), Department of Transportation (DOT), "ODI Resume, PE16-007," Washington, D.C.: ODI, January 19, 2017.

"NHTSA's examination did not identify any defects in the design or performance of the AEB or Autopilot systems of the subject vehicles nor any incidents in which the systems did not perform as designed."

②より早く、より正確、より手軽になる自動翻訳–更に改良が必要で、課題も残るが…

Korean Times, "Human Translators Rout AI in Much-hyped Translation Event," February 21, 2017.

"AI-based translation programs, which can self-improve by learning from databases thanks to a mechanism called "neural machine translation," will continue to perform better. . . "No matter how fast the translation programs are, many will doubt they can perfectly translate subtle expressions of emotion in literature."

③経済的で効率化された健康管理–今後、激しい国際競争と制度調整に時間がかかるが…

Nature, "Chinese AI Company Plans to Mine Health Data Faster than Rivals: iCarbonX Believes Its Cutting-edge Partners and Generous Funding Give It the Upper Hand," January 10, 2017

"One of China's most intriguing biotechnology companies has fleshed out an earlier quixotic promise to use artificial intelligence (AI) to revolutionize health care. . . As well as Google, IBM and various smaller companies, such as Arivale of Seattle, Washington, are working on similar technology. But Wang (the founder of the Chinese company) says that the iCarbonX alliance will be able to collect data more cheaply and quickly."

④暴走を安全に停止出来るAI—未だ、完璧とは言えないが…

Orseau, Laurent and Stuart Armstrong, "Safely Interruptible Agents," Google DeepMind and University of Oxford, June 1, 2016.

Discussion: Recent References

II: AIの将来: まだ不安?

①AI/Robotics導入の危険性—全般的な議論、国際的合意を欠き、無秩序な軍民両用技術の開発

World Economic Forum, "The Global Risks Report 2017" January 11, 2017.

"A new arms race is developing in weaponized robotics and artificial intelligence."

Smith, Sean, *The Internet of Risky Things: Trusting the Devices That Surround Us*, Sebastopol, CA: O'Reilly & Associates Inc., January, 2017.

②AI/Robotics導入の危険性—医療分野

Alemzadeh, Homa et al., "Adverse Events in Robotic Surgery: A Retrospective Study of 14 Years of FDA Data," *PLoS One*, Vol. 11, No. 1 (April 2016).

"Despite widespread adoption of robotic systems for minimally invasive surgery in the U.S., a non-negligible number of technical difficulties and complications are still being experienced during procedures."

③AI/Robotics導入の危険性—老人介護・幼児教育分野

Royakkers, Lambèr and Rinie van Est, *Just Ordinary Robots: Autonomous from Love to War*, Boca Raton, FL: CRC Press, September 2015.

"Sparrow and Sparrow . . . describe care robotics for the elderly as "simulacra" replacing real social interaction." . . . Sparrow and Sparrow . . . find it "not only misguided, but actually unethical, to attempt to substitute robot simulacra for genuine social interaction."

[Sparrow, R., and Sparrow, L. "In the Hands of Machines? The Future of Aged Care," *Minds and Machines* 16 (May 2006): 141-161]

④AI/Robotics導入の危険性—失業問題

Financial Times, "Robot Tax: Do Androids Dream of Personal Deductions? A Levy on Machines, Some Say, Could Thwart Job-creating Technologies," February 25, 2017.

"If the latest wave of automation causes large numbers of job losses, the Microsoft co-founder said, then taxing the robots and using the money to retrain the humans may be one way to deal with the upheaval ahead."