

(For JSPS Fellow)

Form B-5

Date (日付)

23/8/2016 (Date/Month/Year: 日/月/年)**Activity Report -Science Dialogue Program-**

(サイエンス・ダイアログ事業 実施報告書)

- Fellow's name (講師氏名): Pablo Stoliar (ID No. L16521)- Participating school (学校名): Aichi Prefectural Jishukan High School- Date (実施日時): 19/8/2016 (Date/Month/Year: 日/月/年)- Lecture title (講演題目): (in English) Introduction to Neuromorphic Systems(in Japanese)

- Lecture summary (講演概要): Please summary your lecture 200-500 words.

The most interesting topic in my present research is to develop a novel "neuromorphic system". Neuromorphic system is an assembly of electronic devices, which is used for the "artificial neural network". The artificial neural network is a kind of connections of electronic devices (we call it "architecture" like an architecture of buildings) in order to mimic the human's brain. Because the architecture of the neural network is completely different from that of the standard computers, we have to develop new building blocks. Good examples are artificial synapses and artificial neurones. In this lecture, I will present the development of those new building blocks, and you can learn the basis of neuromorphic systems. Furthermore, through this lecture, I will show my experience, which led me to a long way to become a scientist. I hope you will find a clue to imagine what is necessary to realize your dream.

Three scientific publications are the supporting materials of my lectures. I will send photocopies of the three papers to your teacher, so you can access them if you are interested in; [Jain et al, "Artificial neural networks: A tutorial", IEEE computer 29 (1996) 31] is a pre-requirement for the full comprehension of the scientific content of the lecture. The lecture will be focused in [Indiveri and Horiuchi, "Frontiers in neuromorphic engineering", Frontiers in neuroscience 5 (2011) 118]. Finally, [LeCun et al, "Deep learning", Nature 521 (2015) 436] can be considered as a follow-up.

- Language used (使用言語): English

- Lecture format (講演形式):

◆Lecture time (講演時間) 80 min (分), Q&A time (質疑応答時間) 20 min (分)

◆Lecture style (ex.: used projector, conducted experiments) used projector

(講演方法 (例: プロジェクター使用による講演、実験・実習の有無など))

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- ◆ Interpretation (ex.: assistance by accompanied person, provided Japanese explanation by yourself) (通訳 (例: 同行者によるサポート、講師本人による日本語説明))

Assistance by accompanied person

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- ◆ Name and title of accompanied person (同行者 職・氏名)

Dr. Isao H. Inoue

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- ◆ Other note worthy information (その他特筆すべき事項):
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- Impressions and opinions from accompanied person (同行者の方から、本事業に対する意見・感想等がありましたら、お願いいたします。):