Doctoral Dissertation

Theoretical Studies on Low-Speed Calculation Algorithms of π Utilizing the Sun and the Moon

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February 20, 2025

Division of Information Science Graduate School of Science and Technology Nara Institute of Science and Technology

A Doctoral Dissertation submitted to Graduate School of Science and Technology, Nara Institute of Science and Technology in partial fulfillment of the requirements for the degree of Doctor of ENGINEERING

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Theoretical Studies on Low-Speed Calculation Algorithms of π Utilizing the Sun and the Moon*

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Abstract

The calculation of π has been paid much attention since human beings appeared on the earth.

This thesis presents novel low-speed algorithms to calculate π utilizing the sun and the moon.

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Keywords:

 π , astronomy, mathematics, computer, algorithm

^{*}Doctoral Dissertation, Division of Information Science, Graduate School of Science and Technology, Nara Institute of Science and Technology, February 20, 2025.

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Figure 1. Convolutional Neural Network (CNN)

1. Start

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In Sec. 1.1, we describe our research in the past, In Chap. 2, we discuss the current status and future issues. Also attached in the appendix A is the bonus #1.

1.1 Previous research

Previous studies include[1].

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1.2 Research goal

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2. Summary

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${\bf Acknowledgements}$

Thank you. Thank you.

References

[1] A. Krizhevsky, I. Sutskever, and G.E. Hinton. Imagenet classification with deep convolutional neural networks. In *Advances in Neural Information Processing Systems* 25(NIPS'12), pages 1097–1105, 2012.

Random image

Figure 3. Random image

Appendix

A. Random

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B. Random2

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