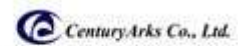


Event-Based Vision Camera “SilkyEvCam®”
Application Idea and Algorithm Contest 2024

Contest Guidelines

Entry period : Wed. April 10, 2024 – Wed. July 31, 2024

Submission period : Mon. July 1, 2024 – Tue. September 10, 2024



- Skill up with an advanced technology “EVS camera” experiences!
- Approaches to solving social problems
- Feedback from engineers & researchers in advanced technology and managements

SilkyEvCam®, an event-based vision camera from CenturyArks Co., Ltd. is a compact camera equipped with the Event-based Vision Sensor (EVS) which is an advanced image sensor that mimics the structure of the retina of the human eye. Unlike conventional frame cameras, the camera detects only luminance changes (brightness and darkness) and outputs pixel-by-pixel data at high speed along with pixel coordinates and time information. It is expected to be a solution to social issues such as the declining workforce, nursing care issues, and aging social infrastructures.

We invite you to join us in taking on the challenge of solving better social and problematic issues using the advanced technology of "event-based vision cameras" by demonstrating your free ideas, technological capabilities, and the results of your studies and research to date. One of “SilkyEvCam®(VGA) Turnkey Package will be loaned to the applicant (or team) free of charge.

■ About Event-based Vision Camera



Image (1)<Traffic situation on the road in the daytime>

<https://youtu.be/j40ojXn5X30?si=Sr5igo48ynChjjgs>

It does not capture motionless objects such as white lines, guardrails on the road and buildings, but it does capture automobiles and bicycles.

Image (2) < Sudden heavy rain and lightning >

https://youtu.be/spezcljZGY0?si=RyKjk_HuudpcP7QV

Lightning strikes just after the bird flies from lower right to upper left. You can clearly see the lightning running on the rail.

Image (3) < Toy cars running on the rail >

https://youtu.be/tlypZL0Ie2g?si=a_JipQKov0CBBTaN

Even in the darkest places in the back and in intense light, the camera captures the running car.

An event-based vision camera is a camera that captures only the brightness of light (luminance change) and outputs the pixel coordinates and time information at high speed.

- The minimum time resolution is 1 μ sec. It can be used for detecting abnormalities by detecting vibrations and for visual inspections on production lines. In sports, it can also capture the movement of a ball, racket, or athlete.
- With its wide dynamic range (>120dB), it can capture moving objects under the midsummer sun, which may cause halation, or, conversely, even in low illumination such as a warehouse. Since it only detects changes in brightness, it can also be used as a monitoring sensor for nursing and caregivers who want to protect their privacy.
- There is no motion blur (blurring of the subject).
- After capturing images, video can be created at different frame rates.
- Low data capacity and low power consumption allow for long-time shooting. Events that may appear at any time can also be captured in long shots.

■ Entry and Submission Periods

Entry period : Wed. April 10, 2024 – Wed. July 31, 2024



Submission period : Mon. July 1, 2024 – Thu. September 10, 2024

■ Eligible entrants

- University students/graduate students, technical college students, vocational college students and their student teams
- Young researchers/research teams work in universities and colleges/related institutions and other research organizations

■ Contents to be required for this contest

- 1) Idea and its algorithms of an application using an event-based vision camera “SilkyEvCam®”
- 2) Video(s) and/or prototype(s) delivered from above item 1)

*Situations/scenes/methods with utilizing the application are also proposed and included.

■ Materials or document to be submitted

- 1) Idea and Algorithm Sheet file (PDF)

Include explanations of the application idea such as situations/scenes and methods of utilization, and program execution files and execution instructions etc.

- 2) Video(s) and/or Prototype(s)

Video(s) and prototype(s) using the application idea

※Include any shooting methods and innovations.

Note: Any document must be written in either English or Japanese.

■ Awards and Prizes

- [Grand Prize] Number of Awards : 1

Prize money of 100,000 Japanese yen and winner’s submitted work will be posted in a specialized magazine, etc.

- [Award of Excellence] Number of Awards : 1

Prize money of 50,000 Japanese yen and winner’s submitted work will be posted in a specialized magazine, etc.

- [CenturyArks Award] Number of Awards : 1

Prize money of 30,000 Japanese yen

If you entry in accordance with this entry guidelines and submit all required documents and materials by the designated deadline, you will receive one of SilkyEvCam®(VGA) Turnkey Package on loan at no charge, regardless of whether or not you get the award. In this case, you may need some administrative work to get this free gift.

■ Entry and Submission Processes

1) Entry Process

Step 1 Complete the “Entry Form” and send it by Wed. July 10.

Subject of the e-mail : ”Application idea and algorithm contest”

E-mail : pr@centuryarks.com

※After the form is received by the Contest Office, you may be asked/confirmed

about its contents.

※If you are under 18 years of age, a “Letter of Consent” signed by a person with parental authority (guardian) is required.

Step 2 After the contents of the entry form is confirmed by the Contest Office, a set of “Item Lending Form” and “Letter of Pledge” which represent entrant for the loan of one package of “SilkyEvCam® (VGA) Turnkey Package”, will be sent to you within one week by e-mail.

Step 3 You need to agree with the contents of the Item Lending Form and Letter of Pledge, then fill out and sign the Letter of Pledge, and send the original to the following address.

Address:

Attn. Maki Yoshida

Sales Dept. CenturyArks Co., Ltd.

3-13-1, Nishiazabu, Minato-ku, Tokyo, 106-0031 Japan

※If you are under 18 years of age, a parents or guardian’s signature is required on the Letter of Pledge.

Step 4 After the Letter of Pledge is confirmed by the Conest Office. The item (one of SilkyEvCam®(VGA) Turnkey Package) will be sent to the address of the representative of the entry.

Step 5 After you receive the item, you need to our receipt by e-mail to the above address.

2) Submission Process

All items listed in the section “Document and Material to be submitted” must be received by Tue. September 10. (You upload all submitting work to a cloud storage.)

Specifications for the submitting work are as follows.

- Idea and Algorithm Form file

File format : PDF

Size : Letter Size or A-four size

File volume : 10MB or less

- Video file and/or Prototype using of the Idea and Algorithms

File format : MP4

Tile volume : 10MB or less

※Any personally identifiable information (name/affiliation/e-mail address, etc.) should not be included in the contents of the Idea and Algorithm on the form.

※You may be inquired about the content and/or ask you to submit additional information such as RAW data.

■Judges

- CenrutyArks Co., Ltd. <https://centuryarks.com/en/>
- Prophesee S.A. <https://www.prophesee.ai/>

■Judging Criteria

- Ideas that take advantage of the features of event-based vision camera
- Advanced and originality
- Social needs and awareness of problem-solving
- Feasibility of social implementation

■Schedule (April, 2024 - December, 2024)

Apr. 10 (Wed.)	Acceptance of Entries begins (until Jul. 31)
Mid April - August	Experimentation, Research, and Submission preparation by entrants
Jul. 1 (Mon)	Acceptance of Submission begins (until Sep. 10)
Jul. 31 (Wed)	Entry Deadline
Sep. 10 (Tue)	Submission Deadline
Mid September - Mid November	Judge
End of November	Announcement of Results
Mid December	Award Ceremony

■Announcement of Results

The content results will be announced on the CenturyArks official website, and introduced in our e-newsletter and social networking site.

The winners will be interviewed and the winners' work will be published in an article introducing the winning entries in an industry magazine in the first half of 2025.

■Entry and Submission Notes

- Submitted works must be the applicant's own original work, unpublished in Japan or abroad, not yet commercialized, and with no plans for commercialization in the future.
- Must refrain from submitting multiple entries to other contests.
- Only one entry per person or group will be accepted. Do not submit more than one entry per person or group.
- During the judging process, the entrant may be inquired about the submitted work.
- Submitted works that are offensive to public order and morals, or contain violent or sexual expressions will not be considered.
- If there is a possibility that the submitted work may infringe on the copyrights, portrait rights, trademark rights, design rights, or other rights held by a third party, it is the responsibility of the entrant to obtain the necessary permission and notify the Contest Office of such at the time of submission
- In the event that a third party files a lawsuit or other dispute over the submitted work, including infringement of rights, the entrant agrees to indemnify and hold the organizer harmless from any and all losses, damages, and expenses, including reasonable attorneys' fees, incurred by the applicant at his/her own expense and responsibility. The entrant agrees to indemnify and hold harmless the Sponsor from and against all losses, damages and expenses, including reasonable attorneys' fees.
- The organizer reserves the right to cancel the award at its discretion even after the award results have been announced if the submitted work is identical or very similar to previously published utilization ideas or algorithms, or if it infringes on the intellectual property rights of a third party (including cases where the infringement occurs after the work has been submitted).
- Entrants that are found to promote the activities of antisocial groups will be disqualified from the judging process. Even if it is discovered after the award announcement, the award will be revoked without notice.
- In the case of a minor winning an award, the winner will be confirmed separately in writing the consent of the person with parental authority. In the event that the consent of the person with parental authority is not obtained, the award may be revoked.
- Entrant may not claim any objection to the results of the judging, and the organizer is under no obligation to disclose the reasons for such an objection.

■ About the items "SilkyEvCam®(VGA) Turnkey Package

- The resale of SilkyEvCam® (VGA) Turnkey Package and its items, including those loaned or transferred under these terms and conditions, is strictly prohibited. If any resale activity is discovered, the party involved may be subject to strict disciplinary action, including legal action. The purpose of this product is to be used for the development of education, research, and study of event-based vision camera and this contest, and any resale of the product to third parties is strictly forbidden.

■ Right Regulations for submitted works

- The copyright of all submissions belongs to the applicants. However, CenturyArks, Co., Ltd. may consider the use of submitted works or portions thereof in the development of products or applications. In such cases, CenturyArks will consult with the entrant to that effect in advance.
- For the purpose of publicizing this contest and promoting and educating people about CenturyArks's event-based vision camera products, the winning submitted works may be introduced on our official website, e-newsletters, social networking site, printed materials, publications, exhibitions, seminars, etc.

■ Handling of Personal Information

Please review our Privacy Policy below.

[Personal Information Protection Policy - CenturyArks Co., Ltd.](#)

■ Contact Information

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