

# Sony's Academic Engagement Model

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# Meet the Sony family

## Games & Network Services



PlayStation®



Sony Interactive Entertainment

## Entertainment Technology & Services



Consumer Electronics



Professional Products & Solutions



Sony Corporation

## Music



Sony Music Group

## Pictures



Sony Pictures Entertainment

## Imaging & Sensing Solutions



Sony Semiconductor Solutions

## Financial Services



Sony Financial Group

# New initiatives in Sony



## VISION-S

Sony's VISION-S initiative pursues the next generation of mobility.



## Airpeak

Drone project in the area of AI robotics.



## AI Initiatives

Sony seeks to use AI technology to unleash the potential of human creativity.



## Sony Research Inc.

Pioneering the Future of Creation



## Triporous

A sustainable porous carbon material made from rice husks



## aibo

Autonomous entertainment robot that brings fun and joy to its owner



## STARSHERE

Developing nano satellite to launch in 2022 for delivering "inspiring space experiences".



## Small Optical Link for International Space Station (SOLISS)

Research on small optical link system for broad band communication in space



## Sony Global Education













Mission: Creating a new educational infrastructure for a connected society



## Toio™

The new, eye-opening experiences of playing with robotics toys "toio" brings out creativity in children. (Japanese Only)

# Sony's Research Areas

 <p><b>Image &amp; Video</b> Create super reality video experience</p>	 <p><b>Computer Vision &amp; CG</b> Break down the border between virtual and real</p>	 <p><b>Audio &amp; Acoustics</b> Control sounds freely, and create uncharted acoustic experiences</p>	 <p><b>AI &amp; Machine Learning</b> Pursue compact and high-performance AI</p>
 <p><b>Human Interaction</b> Design the ultimate harmony of system and human beings</p>	 <p><b>Communication</b> Connect all sort of things to deliver Reality and Real-time</p>	 <p><b>System Architecture &amp; Processor</b> Turn high-efficiency, high-reliability and low-power consumption system platforms into reality</p>	 <p><b>Robotics</b> Create robots that work in collaboration with humans</p>
 <p><b>Display &amp; Expression</b> Establish new paradigms in display expression</p>	 <p><b>Material &amp; Analysis</b> Explore the mechanisms of materials</p>	 <p><b>Sensing Device</b> Provide sensing technology which outperforms the human senses</p>	 <p><b>Life Science &amp; Healthcare</b> Understand the human body at the molecular level and contribute to a healthy society</p>

# UNIVERSITY COLLABORATION SCHEMES

# OUTSIDE IN

**Sony Research  
Award Program**  
(Corporate Program)



# INSIDE OUT

**Sony Interactive  
Entertainment**  
(Business Unit Program)

# What is the Sony Research Award Program?

## SONY RESEARCH AWARD PROGRAM

As part of one of the world's most innovative and recognizable brands, we are committed to support university research and innovation in the **U.S., Canada, India, and 17 European countries**, while also fostering partnerships with university faculty and researchers. Since 2016, the Sony Research Award Program provides funding for cutting-edge academic research and helps build a collaborative relationship between faculty and Sony researchers. With **awards up to \$150,000 USD\*** per year for each accepted proposal, both the Faculty Innovation Award and Focused Research Award create new opportunities for **university faculties and research institutions** to engage in pioneering research that could drive new technologies, industries and the future.



# What is the Sony Research Award Program?

## Faculty Innovation Award

Up to \$100K USD\* in funds to conduct cutting-edge research in Sony's general areas of interest

## Focused Research Award

Up to \$150K USD\* in funds to conduct research in the areas of Sony's immediate interest

## Submission Guidelines

Eligibility, requirements, submission protocol, and terms are explained in these guidelines.

## Application Window

Proposal submission is open from:  
**July 15, 2023 to September 15, 2023.**

<https://www.sony.com/en/SonyInfo/research-award-program/>



# FACULTY INNOVATION AWARD

Global research and development at Sony enables us to foster innovative ideas, which could ultimately lead to future technology advancements and company growth. In order to speed up and expand the creation of new ideas, we would like to partner with universities and research institutes. This partnership will help cultivate advanced concepts and fertilize our own research and development. The Sony Faculty Innovation Award provides up to \$100K USD\* in funds to conduct pioneering research in the areas listed below. Please select the single most relevant keyword to your submission.

- **Information Technology**

- Audio, Music, Speech, and Language Processing
- Brain Technology
- Computer Vision
- Display System
- Human Sensing and Interaction
- Machine Learning
- Planetary Sensing
- Remote and Immersive Technology
- RF Sensing
- Robotics
- Security
- Systems and Networking
- Visual/Visualization
- Wireless Communications

- **Devices and Materials**

- Analysis/Simulation/Informatics
- Microdisplay/Spatial Light Modulator
- Nanophotonics/Metasurface
- Novel Functional Devices and Materials
- Sensors for Robotics
- Sustainable Devices and Materials

- **Biomedical and Life Science**

- Cardiovascular Disease
- Neuropsychiatric Disease (Mental Health)

Shown on this page are examples of the 2022 Keywords.  
NEW keywords will be announced on July 15th, 2023

# FOCUS RESEARCH AWARD

Solid research is the underlying driving force to crystallize fearless creativity and innovation. While we are committed to run in-house research and engineering, we are also excited to collaborate with academic partners to facilitate exploration of new and promising research. The Sony Focused Research Award provides an opportunity for university faculty, research institutes, and Sony to conduct this type of collaborative, focused research. The award provides up to \$150K USD\* in funds, and may be renewed for subsequent year(s). A list of candidate research topics appears below. Please select the Focused Research Theme for which your submission is written.

## Advanced Image Processing enabled by AI



Recent advances in machine learning have created a paradigm shift for many applications. For instance, deep learning based approaches have achieved a big leap forward over the previous state-of-the-art in classification, segmentation, and recognition. Sony is looking for innovative research in image/video processing based on machine learning to significantly improve existing image/video processing techniques and applications in 3D as well as 2D.

### Scope of Proposal:

- Topics of interests include:
  - Image/video generation such as text to photo-realistic image, style transfer, modal transfer based on new approach, e.g. photo-realistic image generation using neural rendering or generative transformer,
  - Image/video compression for viewing and sensing such as neural representation, deep learning hashing, generative coding,
  - Multi-view image/video generation and 3D model generation, e.g. novel view synthesis using neural rendering, neural inverse rendering,
  - Perceptual metrics for predicting photo-realistic image quality or 3D image quality,
  - Low-latency processing and complexity/computational cost reduction for the above applications, and
  - Training data creation such as CG utilization for the above applications.

Shown on this page is 1 example of the 2022 Themes.  
NEW Themes will be announced on July 15th, 2023

# Award winners in the Sony Research Award Program ...

## 2021 Award Winners (more renewals pending)

- Professor Michal Bajcsy, University of Waterloo, Canada
- Professor Gedas Bertasius, University of North Carolina at Chapel Hill, United States
- Professor Federico Capasso, Harvard University, United States
- Professor Li-Jing Cheng, Oregon State University, United States
- Professor Aaron Courville, University of Montreal, Canada
- Professor Jia Deng, Princeton University, United States
- **Professor Guillermo Gallego, Technische Universität Berlin, Germany**
- Professor Aditya Grover, University of California, Los Angeles, United States
- Professor Charles Hages, University of Florida, United States
- Professor Cho-Jui Hsieh, University of California, Los Angeles, United States
- Professor Dongyeop Kang, University of Minnesota Twin Cities, United States
- Professor Pan Li, Georgia Institute of Technology, United States
- Professor Jun Liu, University at Buffalo, United States
- **Professor Saturnino Luz, The University of Edinburgh, United Kingdom**
- Professor Arka Majumdar, University of Washington, United States
- **Professor Stephen Morris, University of Oxford, United Kingdom**
- Professor Aiichiro Nakano, University of Southern California, United States
- Professor Andrew Owens, University of Michigan, United States
- Professor Srijith P.K, Indian Institute of Technology Hyderabad, India
- Professor Bryan Pardo, Northwestern University, United States
- Professor Arpita Patra, Indian Institute of Science, India
- Professor Jose Principe, University of Florida, United States
- Professor Ravi Ramamoorthi, University of California, San Diego, United States
- Professor Arindam Sanyal, Arizona State University, United States
- Professor Sebastian Scherer, Carnegie Mellon University, United States
- Professor Alireza Vahid, University of Colorado Denver, United States
- Professor Sheng Wang, University of Washington, United States
- Professor Xiaolong Wang, University of California, San Diego, United States
- Professor Benjamin Williams, University of California, Los Angeles, United States
- Professor Lei Zhou, University of Texas at Austin, United States
- Professor Mohit Gupta, University of Wisconsin-Madison, United States\*\*
- Professor Chia Wei Hsu, University of Southern California, United States\*\*
- Professor Zhou Yu, Columbia University, United States\*\*

# OUTSIDE IN

**Sony Research  
Award Program**  
(Corporate Program)



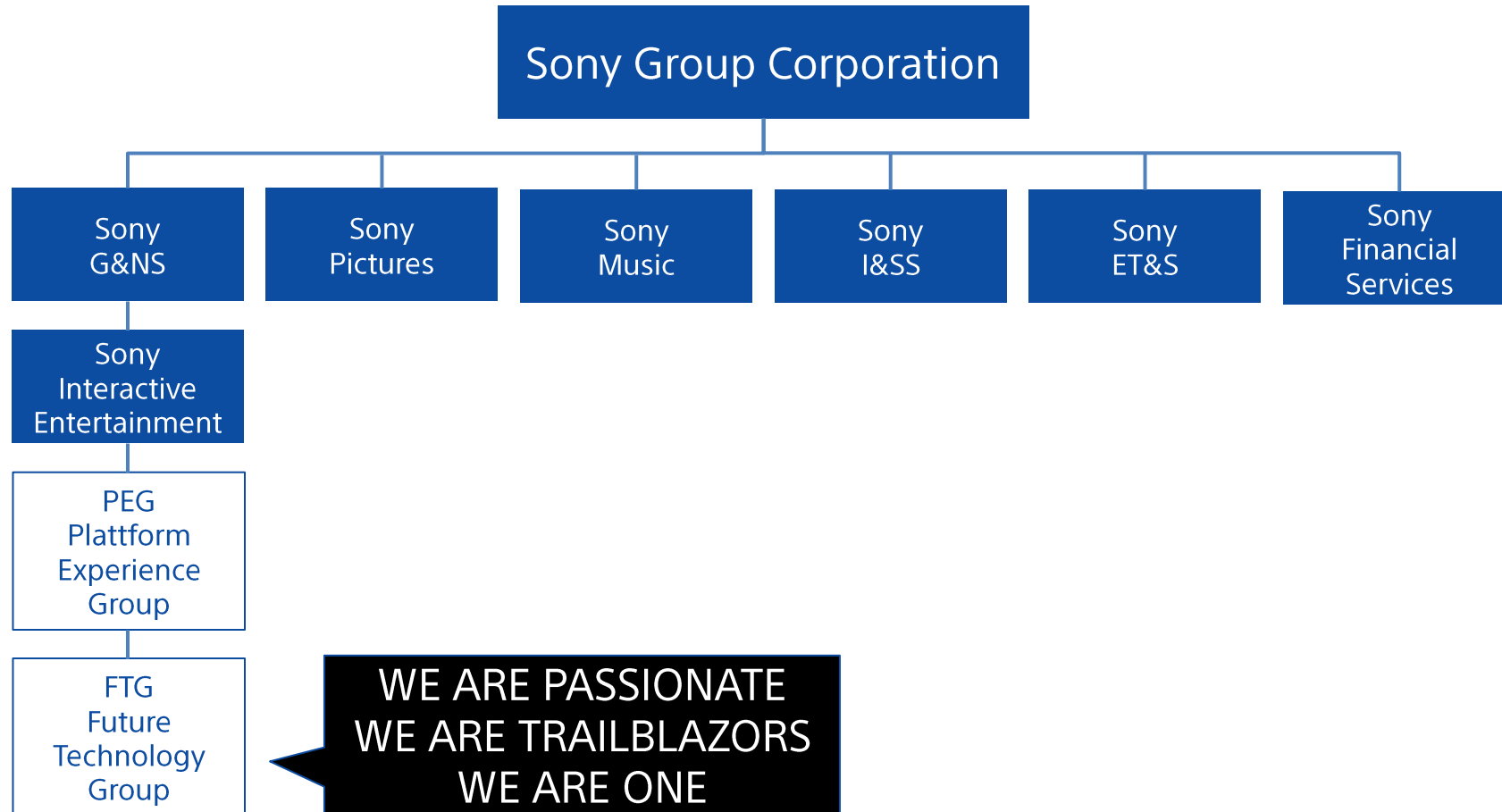
# INSIDE OUT

**Sony Interactive  
Entertainment**  
(Business Unit Program)



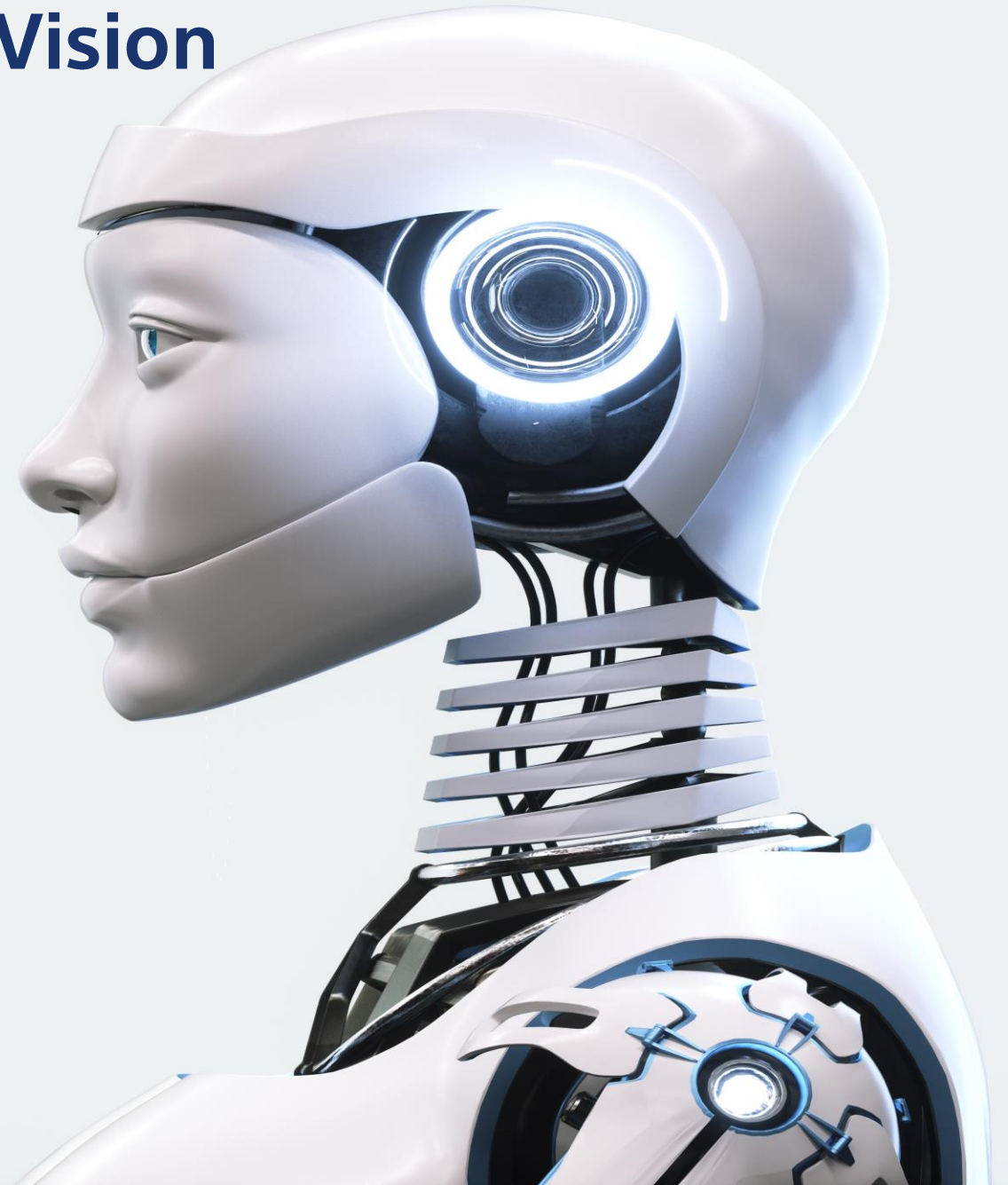


# Where does PlayStation sit?



# Future Technologies Group Vision

**“To transform the experience of Play through bold innovation and technical creativity”**





# Future Technologies Group R&D Strategy: Overview

A man with dark hair and glasses is wearing a headset and holding a VR controller. He is looking intently at the controller. The background is a bright, blurred indoor space with light rays and bokeh effects, suggesting a high-tech or laboratory environment.

In order to be successful in achieving our Vision and realize the full impact of our R&D investments, it is essential for PlayStation to closely align our R&D strategy with a blend of academic input and focus our resources on the areas we believe will be the largest future differentiators.



# How we work with Academia





# How we work with Academia

- **Centres of Doctoral Training partnerships**
- **Short PhD placements**
- **Industry sponsored PhDs**
- **Contracted Research projects**
- **Mentoring**
- **Steering Board members**
- **Letters of support**
- **Hackathons**





# University focus - Strategic partnerships

- Memorandum of Understanding
- Research Partnership
- Student / developing talent development – PhD, masters programmes, Early Career Researchers / Post Doctoral
- Seminar Series development / Knowledge exchange commitment
- Joint publishing commitment

# Areas of research focus

- Cloud Gaming,
- AI in Gameplay,
- Advanced Display Technologies



**How do we build, strengthen and manage partnerships?**





# UCL partnership

FTG's collaboration with PhD student at University College London is helping to improve natural interaction in XR

- Learn and contribute to state of the art - push boundaries of XR interaction
- Increase team's domain expertise
- Broaden research domains leading to novel experiments, new discoveries
- Develop pilot studies, large scale studies
- Five patents so far (one for each month of the collaboration)
- Familiarise engineers with academic research process and mindset
- Teach FTG engineers how to write papers, how to contribute to a research field



# How to engage with Sony



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