

Honda Research Institute USA (HRI-US) is at the cutting edge of Honda's research and development activities. Inspired by Honda's global slogan - The Power of Dreams - we pursue emerging technologies and bring them into reality to make people happy, even as we are engaged daily in highly scientific, pioneering work. We realize that dreams don't come from organizations, systems, or money. They come from people, and we seek people who have such a challenging nature to work with us.

HRI-US (Silicon Valley) is searching for talented scientists and engineers with expertise in computer vision and machine learning to join our team of engineers and scientists in Mountain View, California, to support activities in the next generation mobility systems.

As a member of the group, we encourage the candidates to contribute new research ideas and to participate in presentations and scientific publications. You will also have the opportunity to build close relationships with our research partners at world-class universities and at other Honda Research Institutes in Europe and Japan to create cutting edge solutions to complex and real world problems.

Scientist: Driver Situational Awareness Understanding (Job Number: P16F01)

The position focuses on applying machine learning and decision support to analyze and enhance driver situational awareness for next generation advanced driver assistance systems.

Key responsibilities:

- Participate in ideation, formulation, and definition of the situational awareness problem in the driving scene domain.
- Develop computational models of driver gaze behavior.
- Develop algorithms for spatial and temporal model of traffic scene saliency with objects, semantics, and low-level cues.
- Develop and evaluate metrics to verify the reliability of the proposed algorithms.
- Conduct user experiments using our advanced test vehicles equipped with cameras, LiDAR, CAN-bus, and driver monitoring sensors.
- Participate in sensor calibration/synchronization, data collection and data management.
- Contribute to a portfolio of patents, academic publications, and prototypes to demonstrate research value.

Qualifications:

- PhD in computer science, electrical engineering, or related field.
- Research experience in machine learning, computer vision and driver behavioral analytics.
- Research experience in temporal modeling preferred.
- Experience in Deep Learning frameworks such as TensorFlow, Caffe or related tools preferred.
- Hands on experience with human monitoring devices such as eye tracking systems preferred.
- Experience in Robot Operating System (ROS) preferred.
- Highly proficient in software engineering using C++ and Python.
- Strong written and oral communication skills including development and delivery of presentations, proposals, and technical documents.
- Strong publication record in the areas of computer vision, machine learning, and human-machine interaction.

Research Engineer: Computer Vision/Multimodal Systems (Job Number: P16F02)

The position focuses on vehicle sensor calibration and applying machine learning and computer vision algorithms to recorded data obtained from our experimental platforms.

Key Responsibilities:

- Applying computer vision/multimodal data analysis methods to data collected on street scenes using our advanced test vehicles.
- Developing processes, procedures, and algorithms for calibration of multiple sensors including camera, LiDAR, GPS, IMU, CAN-bus, and radar.

Qualifications:

- M.S. or PhD in computer science, electrical engineering, or related field.
- Research experience in computer vision, and driver behavioral data analytics.
- Hands on experience in multi-sensor calibration and setup.
- Highly proficient in software engineering using C++ and Python.
- Experience in Robot Operating System (ROS) preferred.
- Experience in hardware and software synchronization of asynchronous data streams preferred.
- Strong written and oral communication skills including development and delivery of presentations, proposals, and technical documents.

Scientist: Multimodal Temporal Data Segmentation (Job Number: P16F03)

This position offers the opportunity to conduct innovative research on a broad set of problems related to multi-modal temporal segmentation.

Key Responsibilities:

- Propose, create, and implement supervised and unsupervised data segmentation/clustering algorithms from multimodal and multisensory data streams obtained from traffic scenes.
- Develop and evaluate metrics to verify reliability of the proposed algorithms.
- Participate in ideation, creation, and evaluation of related technologies in various domains other than traffic scenes, including temporal segmentation of human activities.
- Contribute to a portfolio of patents, academic publications, and prototypes to demonstrate research value.
- Participate in data collection, sensor calibration, and data processing.
- Participate in software development and implementation on various experimental platforms.

Qualifications:

- PhD in computer science, electrical engineering, or related field.
- Research experience in computer vision, machine learning, and multi-modal signal processing.
- Strong familiarity with machine learning techniques pertaining to sequential data processing.
- Preferred hands on experience in handling multi-modal sensor data.
- Preferred experience in open-source Deep Learning frameworks such as TensorFlow or Caffe.
- Highly proficient in software engineering using C++ and Python.
- Strong written and oral communication skills including development and delivery of presentations, proposals, and technical documents.
- Strong publication record in one or more of the following areas: computer vision, machine learning, or computer vision.

Scientist: 3D Computer Vision (Job Number: P16F04)

This position offers the opportunity to work on a broad and exciting set of problems related to processing of 3D point cloud data, including recognition, registration, segmentation, tracking, representation, and transmission.

Key Responsibilities:

- Propose, create, and implement state-of-art point cloud segmentation and classification algorithms.
- Develop algorithms for spatial and temporal registration of 3D point cloud data, recorded from multiple LiDAR sensors.
- Develop and evaluate metrics to verify the reliability of the proposed algorithms.
- Participate in ideation, creation, and evaluation of various related technologies, including 3D SLAM.
- Contribute to a portfolio of patents, academic publications, and prototypes to demonstrate research value.
- Participate in software development and implementation on various experimental platforms.

Qualifications:

- PhD in computer science, electrical engineering, or related field.
- Strong familiarity and research experience in 3D computer vision and machine learning.
- Hands-on experience in one or more of the following: LIDAR data processing, Simultaneous Localization and Mapping (SLAM), Perception, Machine Learning, Sensor Fusion.
- Preferred hands on experience in handling multi-modal sensor data.
- Highly proficient in software engineering using C++ and Python.
- Preferred experience with Point Cloud Library (PCL), Robot Operating System (ROS), and GPU programming.
- Preferred experience in open-source Deep Learning frameworks such as TensorFlow or Caffe.
- Strong written and oral communication skills including development and delivery of presentations, proposals, and technical documents.
- Strong publication record one or more of the following areas: 3D computer vision, machine learning, or SLAM.

[Contract Software Engineer]: Computer Vision and Sensor Fusion (Job Number: P16T02)

This position offers the opportunity to work on real-world perception problems such as object detection, tracking and sensor fusion and deploy your solutions to real AD vehicles.

Key Responsibilities:

- Integrate and implement perception algorithms for our AD vehicles.
- Improve the runtime robustness of these perception algorithms.
- Perform real-time optimization on automotive platforms equipped with GPUs.
- Perform evaluation of the developed algorithms both in simulation and in real world.
- Translate perception research output into efficient code.

Minimum Qualifications:

- M.S. in Computer Science, Electrical Engineering, or related field.
- Strong programming skills in Python or C++.

Preferred Qualifications:

- Expertise in Computer Vision and Machine Learning.
- Hands-on experience with libraries such as OpenCV and numpy.
- Experience with processing different sensor modalities such as lidars and radars.
- Experience in deep learning frameworks such as Tensorflow or Caffe.
- Experience with GPU programming.
- Familiarity with Robot Operating System (ROS).

Duration:

- 2 years

The candidate must possess excellent interpersonal and communication skills, eagerness to learn and grow, and have a flexible approach to solving problems.

Application Instructions:

Please send an e-mail to careers@honda-ri.com

with the following:

- Subject line including the job number you are applying for
- Recent CV
- A cover letter explaining how your background matches the qualifications

Candidates must have the legal right to work in the U.S.A.