

Honda Research Institute USA (HRI-US) strives to be at the cutting edge of Honda's research and development activities. Driven by Honda's global slogan - The Power of Dreams - we pursue emerging technologies and bring them into reality to make people happy by engaging 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 spirit to join us.

HRI-US (Silicon Valley) is searching for talented scientists and engineers with expertise in computer vision and machine learning to join our team 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.

For more information, please visit the our link: <http://usa.honda-ri.com/Pages/Careers.aspx>

Scientist: Machine Learning for Multimodal Time Series Data (Job Number: P17F01)

This position offers the opportunity to conduct innovative research on a broad set of problems related to scene and driver understanding. The successful candidate focuses on research and development of machine learning algorithms toward analysis, recognition, prediction, and anomaly detection of time series data captured by multi-modal data streams including video cameras, driver monitoring sensors, and vehicle sensors.

Key Responsibilities:

- Research and development of machine learning, video/signal processing algorithm.
- Design, development, and integration of the software systems and architectures necessary to realize research prototypes.
- Develop and evaluate metrics to verify reliability of the proposed algorithms.
- Participate in data collection, sensor calibration, and data processing.
- Contribute to a portfolio of patents, academic publications, and prototypes to demonstrate research value.

Minimum Qualifications:

- PhD in computer science, electrical engineering, or related field.
- Strong familiarity with machine learning techniques pertaining to visual and/or signal processing.
- Highly proficient in software engineering using Deep Learning frameworks such as TensorFlow and/or PyTorch.
- 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.

Preferred Qualifications:

- Hands-on experience in handling multi-modal sensor data.

Scientist: Computer Vision & Machine Learning (Job Number: P17F02)

The position focuses on research and development of computer vision and machine learning algorithms toward analysis, segmentation, recognition, reconstruction, and interpretation of scenes captured by multi-modal data streams including video cameras and range sensors.

Key Responsibilities:

- Research and development of computer vision, machine learning, and optimization algorithms for feature selection, semantic segmentation, odometry, motion analysis, and recognition/tracking/forecasting of objects and persons.
- Design, development, and integration of the software systems and architectures necessary to realize research prototypes.
- Develop and evaluate metrics to verify reliability of the proposed algorithms.
- Participate in data collection, sensor calibration, and data processing.
- Participate in ideation, creation, and evaluation of related technologies in various domains including traffic scenes and indoor robotics.
- Contribute to a portfolio of patents, academic publications, and prototypes to demonstrate research value.

Qualifications:

- M.S. or PhD in computer science, electrical engineering, or related field.
- Strong familiarity with machine learning techniques pertaining to visual recognition and/or video analytics.
- 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.

Preferred Qualifications:

- Experience in open-source Deep Learning frameworks such as TensorFlow or Caffe.
- Hands-on experience in handling multi-modal sensor data.

Software Engineer (Job Number: P17F03)

As part of our System Integration Group, the candidate will be in charge of designing and developing a scalable and reliable software architecture for our Autonomous Driving activities. He/she will also be involved in the research and development of state of the art motion planning and decision making algorithms that will be tested on the Automated Drive vehicle.

Responsibilities:

- Understand and analyze state of the art approaches and contribute to algorithm development in the areas of path/motion planning and decision making.
- Implement low-latency and high performance software modules, integrate, deploy, and test them in our AD platform.
- Develop software infrastructure and tools to facilitate team's development.

- Be an essential member of a team of engineers and scientists that develop autonomous driving technologies in a fast-paced software development environment.

Qualifications:

- M.S. (or B.S. with 2+ years experience) in computer science, electrical engineering or related field.
- Proficient in modern software development tools such as GCC, CMake, Git, CI, Docker.
- Experience with Robot Operating System (ROS).
- Expertise in motion planning theory, decision making.
- Excellent programming skills in C++.
- Experience in data structures and advanced algorithms.
- Proven ability to design, develop and debug production quality code.
- Be self-motivated and able to work well in cross-functional teams.
- Strong communication skills including technical documentation, written reports, proposals, development and delivery of presentations and the ability to listen and communicate effectively.

Preferred Qualifications:

- Familiarity with hardwares, including cameras, LiDAR, GPS, CAN, IMU, USB, Ethernet.
- Knowledge in basic machine learning technology.
- Extensive hands-on experience in real-world robotics applications.

Scientist: Decision Making / Motion Planning (Job Number: P17F04)

The position focuses on bringing machine learning techniques to real-world decision making problems. It has a strong emphasis on real problems with real solutions and requires broad knowledge in the areas such as reinforcement learning, deep learning and policy optimization.

Key Responsibilities:

- Perform research to make machine learning applicable to real world decision making problems.
- Develop decision making and motion planning algorithms for autonomous vehicles.
- Participate in software development and prototyping.
- Contribute to a portfolio of patents and academic publications demonstrate research value.

Minimum Qualifications:

- PhD/MSc in Computer Science, Electrical Engineering, or related field.
- Expertise in machine learning.
- Expertise in decision making under uncertainty.
- Familiarity with motion planning algorithms.
- Proven track record in conferences/journals.
- Strong programming skills in Python or C++.

Preferred Qualifications:

- Experience in reinforcement learning and/or deep learning.
- Experience in behavior cloning.
- Familiarity with probabilistic reasoning in AI.
- Experience in deep learning frameworks such as Tensorflow.
- Familiarity with Robot Operating System (ROS).

Scientist: Video / Multimodal Data Analytics (Job Number: P17F05)

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: Human Machine Interface (Job Number: P17F06)

This position offers the opportunity to conduct innovative research on a broad set of problems related to human-machine interface for automated/semi-automated vehicles.

Key Responsibilities:

- Propose, create, and implement novel human-machine interaction concept by fusing visual, auditory and tactile devices.
- Conduct human factor studies for the proposed systems.
- Participate in ideation, creation, and evaluation of related technologies in various domains other than traffic scenes, including machine learning and computer vision.
- 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.

Minimum Qualifications:

- PhD in computer science, electrical engineering, or related field.
- Research experience in human-computer interaction, interface design.
- Highly proficient in software engineering using C#, 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: human-machine interaction or human factor.

Preferred Qualifications:

- Hands-on experience in handling multi-modal sensor data.
- Experience in human-factor analysis for automobiles.

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.