Computer Vision Scientist/Engineer

* Work with world-class talented group of software engineers and scientists to design and implement cutting edge autonomous driving technologies.
* Train machine learning and deep learning models on a computing cluster to perform visual recognition tasks, such as segmentation and detection.
* Enjoy access to large scale autonomous driving proprietary data, run experiments, learn, iterate, and ship
* Strong ability to write to write high quality code in C++ or Python.
* Strong understanding of machine learning: you should be familiar with the process (data collection, training, evaluation, and making iterative improvements) of building effective learning systems.
* Experience with at least one main stream deep learning frameworks, including TensorFlow, Caffe(2), MXNet, PyTorch.
* Experience with data science tools including Python scripting, numpy, scipy, matplotlib, scikit-learn and cloud computing architecture e.g hadoop/spark.
* Strong engineering practices, debugging/profiling skills, familiarity with multi-threaded programming.
* Experience in autonomous driving is a strong plus.
* MS degree in Computer Science, similar technical field of study or equivalent practical experience.

Sensor Fusion Engineer (Perception)

* Work with world-class talented group of software engineers and scientists to design and implement cutting edge autonomous driving technologies.
* Work on tracking and sensor fusion algorithms related with multiple sensor perception
* Enjoy access to large scale autonomous driving proprietary data, run experiments, learn, iterate, and ship

* MS/PhD in Computer Science, Mathematics, EE or similar field
* Have prior experience in robotics which develops novel algorithms for lidar, radar, and visual tracking
* Have prior experience in sensor modeling and fusion at different levels (i.e. object level, raw data level or stixel level)
* Understand perception work in different sensor models such as lidar, radar and camera
* Ability to work with machine learned and geometric systems
* Ability to write clean, fast, reliable and highly scalable C++ code

**Research Scientist/Engineer - Localization and Mapping**

* Work on a diverse set of data including GPS/IMU, LiDAR, and high-resolution imagery to create high-precision maps or develop novel algorithms for accurate vehicle localization.
* Track and apply the latest algorithm improvements from industry and the research community.
* Work with a world-class, talented group of software engineers and scientists to design and implement cutting-edge autonomous driving technologies.
* Design, develop, test, deploy, maintain, and improve the critical software.
* Manage individual project priorities, deadlines, and deliverables.
* You will receive guidance from a team of world-renowned leaders in software engineering, robotics, and AI.
* M.S. with at least 3 years of prior experience or Ph.D. in Computer Science, Electrical Engineering, or similar technical field.
* Strong in coding - ability to write high-quality code in C/C++. Python programming is a plus.
* Experience in one of the following areas is required: robotics, computer vision, or machine learning.
* Expertise in structure from motion, multi-view geometry, 3D reconstruction, large-scale optimization, object detection/recognition is desired.
* Proven system integration and software architecture skills.
* Publication record in top venues (ICRA/RSS/ICCV/CVPR, etc) is a strong plus. Experience in autonomous driving is a strong plus.

**Automotive Hardware Security Engineer**

* Work with security engineering team to map the system security requirements to hardware requirements
* Define security software and hardware partitioning requirements
* Perform design and implementation reviews of autonomous driving platform hardware
* Work with automotive OEMs and Tier1 suppliers to gather requirements ensuring future changes to platform security strategies are practical
* Audit current and proposed infrastructure and software management processes, identifying possible threats and security weaknesses, and formulating/driving improvements necessary to enhance security posture
* Conduct penetration tests and risk assessments in an automotive environment
* Document vulnerabilities and mitigation action plans
* BS degree in EE or Computer Science, 5+ years similar technical field practical experience
* Excellent hardware security fundamentals, with 5+ years of experience
* Broad knowledge in embedded hardware security for various types of devices ranging from micro-controllers to power graphic processing, and various running environments such as Linux, RTOS, and no operating system
* Knowledge of the CAN, FlexRay, MOST, and Ethernet serial data communication systems
* Basic knowledge of major automotive subsystems
* Excellent teamwork and customer facing communication skills
* Capable of working in a rapidly changing environment and have the passion to learn the new technologies
* Experience working with automotive platform architecture or similar field architecture
* Familiarity with information security best practices
* Excellent written and verbal communication skills
* Experience providing guidance and leadership to novice engineers

**Functional Safety Hardware Engineer**

* Develop safety requirements at the integrated circuit and system levels to achieve and maintain the safety of automotive systems per ISO 26262 requirements
* Develop technical work products specific to functional safety, e.g. hazard and risk assessment, item definition, functional safety concept, technical safety concept, FTAs, DFMEAs, criticality analyses, other safety analyses, and test coverage analysis for safety requirements
* Implement safety management programs in product development settings
* Support System/Software Fault Tree Analysis with other functional safety engineers
* Coordinate verification reviews
* Work with automotive industry solution and component providers to deliver a commercial product for the L3/L4 market
* BS degree in EE, 5+ years relevant experience
* 5 years of experience in automotive electronic systems or related industry developing safety-critical requirements, software, or electronic hardware systems
* Experience designing integrated circuits for functional safety compliance and performing chip level safety analysis
* Experience with RTL design tools and languages such as Verilog, VHDL, Synopsys, Cadence, or similar
* ISO 26262 certification
* Capable of working in a rapidly changing environment and have the passion to learn the new technologies
* Excellent written and verbal communication skills
* Solid track record in prioritizing and executing tasks when under extreme pressure
* Proven experience identifying, analyzing and resolving system problems

**Senior Hardware Engineer**

* Perform a full cycle of automotive PCBA product development (Specification, schematic, layout, BOM, manufacturing and lab bring up)
* Support DVT, EMI/EMC, Shock and Vibration and relevant validation process required by automotive industry
* Debug and failure analysis
* Evaluate performance, reliability and safety
* Cost analysis and optimization
* Familiarity with microprocessor, memory, high-speed interface, digital circuit, analog circuit digital, FPGA logic and DC/DC power supply design
* Previous experience with automotive communication protocol communication network like CAN, CAN-FD, LIN, FlexRay, MOST, and Automotive Ethernet.
* Ability to travel as required

**Senior Software Engineer (Embedded)**

* Work with a talented group of engineers and architects to develop automotive-grade control systems for large volume production.
* Gather system requirements and help define relevant application APIs.
* Simulate, prototype, test, design, and debug functions of the selected sensors and their driver software.
* Interact with partners in the supply chain, such as car manufacturers, sensor providers, and so on.
* 5+ years of hands-on experience in Linux kernel and/or embedded systems engineering (e.g., BSPs).
* Experience in device driver designs that involve sensor control and data acquisition.
* Experience with a real-time control system or embedded OS.
* Experience with x86 and ARM based architecture.
* Detail oriented and engineering excellence in previous work.
* Excellent oral and written communication skills.
* B.S. in Computer Science or equivalent technical discipline. M.S. preferred.

**Senior System Software Engineer**

* Work with a talented team of hardware & software engineers to develop software that will make autonomous driving a reality.
* Develop software to monitor, control & manage the various sensors and other hardware components.
* Work on processing data from various sensors.
* Develop software to interact with other parts of the system including perception modules, HMI, etc.
* Deployment & operational support of software that you develop.
* 5+ years of hands-on experience in system software development using C/C++.
* Must be proficient in either C or C++ with some experience in the other, ideally proficient in both.
* Hands-on deep experience in one (ideally both) of the 2 areas: system software that closely interacts with hardware, back-end server software in C/C++ (Web services, RPC services).
* Good understanding of basic system hardware, computer networking, RPC & web services.

Experience in system monitoring & management, Json, protobuf, gRpc, websocket, cloud infrastructure, kernel programming, Lidar/Radar data processing, point cloud data processing.

* Exercise good software engineering practices (source control, documentation, unit test, safe code).

**Senior System Software Engineer (System/Functional Safety)**

* Work with a talented group of engineers and architects to develop automotive-grade systems for large volume production
* Work with automotive industry solution and component providers to deliver a commercial product for L3/L4 market. Have passion to dive deep into the state-of-the-art autonomous driving system technologies.
* Work with Baidu autonomous driving engineering team to map the system requirements to system software/hardware component requirements.

**Minimum qualifications:**

* BS degree in EE or Computer Science, 5+ years of hands-on experience in Linux kernel and/or embedded systems engineering.
* Experience with a real-time OS, embedded OS including hypervisors.
* Experience with x86 and ARM based architecture.
* Capable of working in a rapidly changing environment and have passion to learn the new technologies.

**Preferred qualification:**

* Experience with **Autosar** is a big plus.
* Experience working with automotive platform architecture or similar field architecture is a plus.

**Sensor Fusion Integration Architect**

* Perform automobile multiple sensors system architecture selection
* Algorithm Development using radar, point cloud, imagery or other tactical sensors as inputs
* Define system architecture and requirements
* Sensing, GPS and IMU hardware, software, and integration
* Autonomy compute communication (sensing, compute, and controller inter-ECU communication
* Analysis of system performance (including periodic analysis of data collected from field tests)
* Modeling and simulation
* System integration and testing
* 5+ years of experience in the development of radar systems, lidar systems, camera, GPS/IMU, and multiple sensor fusion
* Experience in concept development, architecture and numerical analysis, and requirements definition.
* Broad technical background, including experience in developing software intensive systems and multi-sensor integration
* Experience developing applications in C++, Java, MATLAB, and/or similar programming languages in Linux and Windows environments
* Strong mathematical background required
* Knowledge of Bayes Theorem and Dempster-Shafer Theory a plus

**Sensor Fusion Integration HW Engineer**

* Design, development, integration, and test of autonomous compute and sensing hardware
* Mass storage and Event Data Recorders
* Vehicle and Safety Controller HW and related functions
* Sensing, GPS and IMU hardware, software, and integration
* Object tracking and data association, Kalman filtering, time synchronization, sensor fusion
* Autonomy compute communication (sensing, compute, and controller inter-ECU communication)
* Generation and tracking of key performance indicators and regression testing
* Environment and Sensor modeling and simulation
* Autonomy Al and Controls and autonomy R&D Tools
* Autonomy compute and sensing HW and SW redundancy
* Background in development of sensor fusion techniques and algorithms for fully autonomous vehicles
* Experience working on automotive electronics hardware
* Experience in development of sensor fusion techniques and algorithms for fully autonomous vehicles
* Object tracking and data association, Kalman filtering, time synchronization, sensor fusion
* Generation and tracking of key performance indicators and regression testing
* Experience working on automotive electronics hardware
* Understanding of AD sensors such as radar, camera, ultrasonic, and lidar
* Previous experience in developing automotive sensor fusion algorithms (object detection, classification, tracking, sensor fusion)
* Strong C/C++ software development experience
* Experience with existing ADAS technologies such as adaptive cruise control or automatic emergency braking
* Experience working on Autonomous Driving projects and software

**SOC Functional Verification Lead**

* Define Block level and full chip Verification plans
* Help select and lead our internal Verification team
* Ownership of the Verification of mission critical SoC functions
* Monitor progress and coverage results achieved by both our internal teams as well as external verification vendors
* Work with our Safety team to ensure our SoC’s meet Functional Safety goals
* MS in EE
* Experience leading and mentoring Functional Verification teams
* 5-7 years of experience in OVM/UVM based block level verification
* Experience of core-based full-chip verification, probably using C/C++
* Experience of ARM 8.2 architectures
* Experience with emulation and/or FPGA’s for acceleration
* Experience supporting early software development using FPGA prototypes

**SOC RTL Integration Engineer**

* Design tradeoff analysis, HDL implementation, verification/simulation, and laboratory bring up
* Close collaboration with architects, validation, and physical design teams will be required
* BS degree in EE, 5+ years relevant experience
* 5 years of experience as a logic designer, including experience integrating third party IP
* Familiarity with ASIC/SoC design/verification methodologies
* Ability to write detailed and clear microarchitecture documentation
* Ability to write detailed and clear verification plan documentation
* Synthesizable RTL coding and lint/CDC analysis experience
* Familiarity with physical design synthesis and timing constraint/closure process
* Familiarity with ECO implementation and validation
* Familiarity with formal verification between RTL and netlist
* Hardware bring-up and device validation/testing experience
* Experience with Verilog, System-Verilog, VCS, logic analyzer, shell/Perl scripting
* Experience with leading edge ASIC development tools from Synopsys, Mentor or Cadence

**Sr. Embedded Software Engineer, Autonomous Driving**

* Work with world-class software engineers and scientists on cutting edge autonomous driving technology, investigating, evaluating and prototyping heterogeneous computing accelerators.
* Work with SW team to analyze autonomous driving algorithm performance, characterize compute workload, optimize performance among latency, throughput and CPU core utilization,  drive down system cost and deploy into commercial products.
* Work with 3rdparty vendors to bring up Baidu autonomous driving software on their computing platforms, analyze and optimize the SW workload, create/test/deploy SW libraries and APIs to enable adoption of these platforms in commercial products
* BS/MS degree in CS/EE/CE, or similar technical field of study or equivalent practical experience.
* 5+ years of software engineering experience
* Strong in coding: you're able to write high quality code in C++, and least one parallel programming language such as CUDA, OpenCL, OpenMP, SystemC, etc.

Experience in any of the following areas:

* Embedded system performance analysis and optimization
* Embedded system development
* Video or image processing in embedded system
* Deep learning network implemented on embedded systems

**Sr. Embedded System Engineer, Autonomous Driving**

* Work with world-class software engineers and scientists on cutting edge autonomous driving technology, investigating, evaluating and prototyping heterogeneous computing accelerators.
* Work with HW team to analyze and identify bottleneck and architecture limitationsamong compute, storage and I/O components in the autonomous driving system; propose, evaluate and prototype solutions for better performance and safety; drive designs from concepts to commercial products.
* Work with SW team to bring up evaluation platforms and prototypes, analyze SW workload, and come up system level solutions to improve overall performance.
* BS/MS degree in EE/CS/CE, or similar technical field of study or equivalent practical experience.
* 5+ years of experience as a major contributor developing a complex compute system that utilize x86 or ARM CPUs, GPUs, FPGAs, PCIe, Ethernet, etc.
* Fluent in programming languages such as C++ or Python

Experience in any of the following areas

* Embedded system development
* Embedded system validation or performance tuning
* Video or image processing in embedded system
* Parallel programming using CUDA, OpenCL, OpenMP, etc
* Deep learning network implemented on embedded systems

**System Solution Architect, Autonomous Driving**

* Work with business development team to gather application and safety requirements from OEMs or other potential customers, organize and analyze technical requirements
* Collaborate with automotive industry solution and component providers to explore and identify new technology and solutions for Baidu’s autonomous driving products
* Derive and review automotive functional safety requirements and solutions for Baidu autonomous driving products
* Establish excellent cross-functional relationship with Baidu autonomous driving business and engineering teams, map market and system requirements to HW/SW design requirements, create architecture specifications and review implementations, deliver commercial automotive grade products for L3/L4 Autonomous Driving market
* Keep abreast of industry trends and technology development in autonomous driving systems
* BS/MS degree in EE/CS/CE, or 8+ years similar technical field practical experience.
* 5+ years of experience as a major contributor developing large and complex computing system that utilize x86 or ARM CPUs, GPUs, FPGAs, PCIe, Ethernet, etc.
* Excellent teamwork and customer facing written and verbal communication skills.
* Capable of working in a rapidly changing environment and have passion to learn new technologies.
* Solid experience in 1 or more of the following areas
  + Direct interaction with automotive Tier-1 suppliers or OEMs
  + Implementation of ISO 26262 functional safety in automotive products
  + Developing ADAS or autonomous driving HW platforms
  + Developing rugged system meeting harsh environmental conditions, utilizing combination of air, conduction and liquid cooling technologies
* Experience in successfully deploying commercial products to automotive market is a plus.

**Senior Engineer in Vehicle Control (Automotive)**

* You will be responsible for designing and developing new control algorithms for vehicles.
* You will be responsible for automating vehicle control calibration process
* You will be responsible for building vehicle dynamic models
* You will be participating discussion with OEM and tier 1 supplier partners and working on developing controllers together with partner engineers.
* Have solid background and knowledge in vehicle control
* PID control, optimal control theory, LQR, MPC
* Relevant working experience in auto industry (OEM, first tier supplier, car manufacturer) is strongly preferred
* Programming in C/C++/Python is strongly preferred

**Senior Software Engineer (Autonomous Driving)**

* You will be responsible for building, developing and testing new machine learning and deep learning models for multiple functional modules including traffic prediction, intelligent vehicle maneuver decisions.
* You will be responsible for analyzing point cloud and radar raw sensor data and applying machine learning and deep learning technologies
* You will be responsible for designing and developing automated system to fine tuning motion planning algorithms.
* You will be responsible for building data pipelines for offline modeling processing and online modeling verification
* You will be participating to build cutting-edge technology platform to utilizing AI in future mobility
* Deep learning / machine learning is required
* Familiar with popular neural networks
* Prior experience in deep learning is strongly preferred
* Have strong sense of data
* Experience with big data is strongly preferred
* Strong programming in C++
* Advanced degree in Computer Science, Computer Engineering, EE, Maths or related discipline.

**Senior Software Engineer in Motion Planning (Autonomous Driving)**

* You will be responsible for designing and developing new motion planning algorithms for comfortable and safe trajectories efficiently
* You will be responsible for developing algorithms including path planning algorithms for lane keeping, proactive and passive lane change, automatic parking and etc. at different speed..
* You will be working together with control engineers to model vehicle and controller dynamics and use these models to characterize and accelerate controller improvements.
* You will be responsible for analyzing data to assess and improve system performance.
* You will be collaborate with the teams in localization, perception, prediction and control to optimize systems.
* You will be responsible for integrating, deploying, testing and verifying algorithms on the vehicles.
* You will be participating to build new concepts and groundbreaking solutions that shape the future of mobility.
* Solid background and knowledge in vehicle or robotic planning
* Prior experience in vehicle/robotic planning is preferred
* Prior experience in auto industry is preferred
* Strong programming in C++
* Advanced degree in automation, maths, optimization and other related disciplin