Senior Autonomous Controls Engineer in Control Systems Theory at NIO, USA

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Senior Autonomous Controls Engineer – Control Systems Theory

SAN JOSE, CA – AUTONOMOUS DRIVING, FULL-TIME

Team charter:

The Advanced Technologies and Autonomy team is responsible for delivering highly available, high quality systems to enable NIO's Autonomous driving vehicles. Our mission is to provide the next generation of hardware, software and algorithmic solutions. This includes but not limited to sensing, compute, storage as well as vehicle controls and safety system compute.

What the team works on:

• Autonomy hardware and software architecture
• 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
• Environment and Sensor modeling and simulation
• Autonomy Al and Controls
• Autonomy R&D Tools
• Autonomy compute and sensing HW and SW redundancy
• Sensing, GPS and IMU hardware, software, and integration
• Autonomy compute communication (sensing, compute, and controller inter-ECU communication)

You will be part of a team working towards NIO's autonomous vehicle vision. You will be architecting and contributing to system that processes input from a variety of vehicle sensors, evaluates possible vehicle strategies/trajectories, and automates the safe, robust and reliable control of the vehicle.

Responsibilities
Excellent knowledge and practical application of control theory ranging from modern control to advanced control strategies. (Robust/Nonlinear/Adaptive control (H-inf., mu-synthesis, Loop-shaping, Lyapunov based approach … etc) / Optimal Control theory / Real-Time Control Systems / Real-Time Optimization strategies)
Excellent knowledge of Matlab, Simulink and simulation environment.
Familiarity with vehicle modeling & dynamics, motion prediction, and kinematics
Familiarity with system identification, vehicle modeling and validation

Familiarity with estimation theory (filtering techniques …)
Familiarity with stochastic systems.
Experience with C/C++ software development and embedded coding
Proficient in high level algorithm design and transition to low level software implementation
A practical creative hands-on approach to apply the theory required to solve autonomous driving challenges
Passion for product excellence and quality. Strong desire to create high quality product, working as an integral part of a highly capable team
Desire to work in a fast-paced, production oriented environment
Collaborate with other teams to ensure a smooth, robust implementation
Self-driven/enthusiastic/motivated to solve challenging engineering problems

Qualifications
MS with at least 2 years of work experience or PhD in a relevant field
Major in applied mathematics, aerospace, mechanical, robotics, computer science or related field.
Preferred Qualifications
Experience working in an automotive/aerospace/robotics based engineering environment
Experience working in a larger team with great communication skills
Hands-on experience in robotic or autonomous vehicle system design and implementation

About NIO
Our mission is to shape a joyful lifestyle for our users by offering smart, premium electric vehicles and providing the best user experience. We are a global company with world-class research and development, design and manufacturing centers in Shanghai, Beijing, San Jose, Munich, London and nine other locations. NIO U.S. is our Global Advanced Technology Center and North American headquarters.

Our global company has achieved many great milestones such as:
· Securing the inaugural Formula E Drivers' Championship title in 2015
· Unveiling the fastest electric car in the world, the EP9, and setting a lap record for an electric vehicle at the Nürburgring Nordschleife in 2016
· Unveiling its vision car, EVE, in 2017
· Setting a new world speed record for an autonomous vehicle with the EP9 at the Circuit of the Americas in 2017
· Launching the ES8, a seven-seat high performance electric SUV, on December 16 with deliveries slated to begin in 2018.

Want to be a part of this? Join us!

NIO is committed to a policy of equal employment opportunity. We recruit, employ, train, compensate, and promote without regard to race, color, age, sex, ancestry, marital status, religion, national origin, disability, sexual orientation, veteran status, present or past history of

mental disability, genetic information or any other classification protected by state or federal law.

NIO US is an E-Verify employer.