Join Toyota for Engineering Experiential Learning Opportunity!

Intern – Integration of Radars and Communication
Research & Development – InfoTech Network Division | Mountain View, CA

Collaborative. Respectful. A place to dream and do. These are just a few words that describe what life is like at Toyota. As one of the world's most admired brands, Toyota is growing and leading the future of mobility through innovative, high-quality solutions designed to enhance lives and delight those we serve. We're looking for diverse, talented students who want to grow and challenge what's possible with us.

Job Summary:
Toyota is seeking PhD students in Electrical Engineering or Computer Science in the area of vehicular communications technologies.

Objective:
Work on higher layers of the integrated radar and communications system, particularly in the MAC layer. Develop group of radars communicating to each other. Develop MAC layer techniques to control multi-entity communications. Integrated evaluation of the techniques developed above with documentation and reporting.

Required Qualifications:
- Knowledgeable on radar and communications
- Familiarity with network simulators
- Matlab, Python and GNURadio
- Currently pursuing PhD in Electrical Engineering or Computer Science in the area of vehicular communication technologies
- Research and development experience of wireless communications in vehicular environments
- Familiarity with Microsoft Word, Excel, and PowerPoint
- Ability to engage in general research activities such as defining problems and issues to be addressed, finding and using research data, and being able to make recommendations and findings in writing and presentations
- Good planning, time management, decision-making and organizational skills, and ability to manage several tasks at once
- Well-developed interpersonal and communication skills, including ability to respond professionally in all types of situations, maintain confidentiality and exercise tact and good judgment in an international work environment
- Must demonstrate a genuine interest in and willingness to work in the automotive / mobility industry post-graduation

Administrative Detail:
- Must be 18 years of age or older
- GPA of 3.0 or higher
- Must be currently enrolled in a full-time, accredited graduate degree program studying in one of the following disciplines or related fields:
  - **Electrical Engineering or Computer Science**
- Sponsorship for employment-based visas or other work authorization may be available for this intern position
- Must be open to relocation (Mountain View, CA) and have reliable transportation

Standard Benefits:

- Competitive wages
- Paid holidays
- Housing assistance for those that qualify
- Relocation assistance for those that qualify

HOW TO APPLY

1. Log-on to: https://toyota.recsolu.com/external/events/oAIZqjESFlJhbbNA3fD9Rw/sign_up
2. Complete your online candidate profile, and attach a resume
3. **Click Submit**
4. **A Toyota Recruiter will be in contact regarding next steps**

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Intern – 5G NR-V2X Link-Level Simulation
Research & Development – InfoTech Network Division | Mountain View, CA

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Job Summary:
Toyota is seeking PhD students in Electrical Engineering or Computer Science in the area of vehicular communications technologies.

Objective:
Develop a link-level simulator of 5G NR-V2X direct communication. Develop PHY-layer abstraction model of 5G NR-V2X direct communication. Evaluate the link-level performance of 5G NR-V2X direct communication through simulations and summarize the research and write a technical report.

Required Qualifications:
- Knowledge about PHY-layer 4G LTE-V2X and 5G NR-V2X
- Familiarity with MATLAB and ns-3
- Currently pursuing PhD in Electrical Engineering or Computer Science in the area of vehicular communication technologies
- Research and development experience of wireless communications in vehicular environments
- Familiarity with Microsoft Word, Excel, and PowerPoint
- Ability to engage in general research activities such as defining problems and issues to be addressed, finding and using research data, and being able to make recommendations and findings in writing and presentations
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Intern – Cooperative Automated Driving Sensor Analytics
Research & Development – InfoTech Network Division | Mountain View, CA

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Job Summary:
Toyota is seeking PhD students in Electrical Engineering, Mechanical Engineering or Computer Science in the area of vehicular communications technologies.

Objective:
Survey various sensors (V2X, LiDAR, Radar, Cameras) suitable for automated driving. Perform research on cooperative automated driving, sensor fusion, V2X communication, and cooperative perception. Evaluate and analyze performance of proposed schemes through numerical simulation. Perform research on C-AD computer graphics and perception.

Required Qualifications:
- Strong understanding of sensor fusion, cyber-physical systems or edge computing
- Knowledge of machine learning and neural networks, as they are applied to Connected & Automated Vehicles (CAV)
- Understanding of building Systems requirements, Mobility as a Service (MaaS) and Platform Architecture
- Currently pursuing PhD in Electrical Engineering, Mechanical Engineering or Computer Science in the area of vehicular communication technologies
- Research and development experience of wireless communications in vehicular environments
- Familiarity with Microsoft Word, Excel, and PowerPoint
- Ability to engage in general research activities such as defining problems and issues to be addressed, finding and using research data, and being able to make recommendations and findings in writing and presentations
- Good planning, time management, decision-making and organizational skills, and ability to manage several tasks at once
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- Must demonstrate a genuine interest in and willingness to work in the automotive / mobility industry post-graduation

Preferred Qualification:
- Programming experience, e.g., Python, MATLAB, etc.
- Experience of proof-of-concept prototyping for connected cars or IoT systems
- Working knowledge of hardware design for embedded applications (e.g. NVIDIA Jetson, Google TPU, Amazon DeepRacer)

Administrative Detail:
- Must be 18 years of age or older

- GPA of 3.0 or higher
- Must be currently enrolled in a full-time, accredited graduate degree program studying in one of the following disciplines or related fields:
    - **Computer Science, Electrical Engineering, Mechanical Engineering**
- Sponsorship for employment-based visas or other work authorization may be available for this intern position
- Must be open to relocation (Mountain View, CA) and have reliable transportation

Standard Benefits:

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Join Toyota for Engineering Experiential Learning Opportunity!

Intern – Digital Twin Analytics
Research & Development – InfoTech Network Division | Mountain View, CA

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Job Summary:
Toyota is seeking PhD students in Electrical Engineering, Mechanical Engineering or Computer Science in the area of vehicular communications technologies.

Objective:
Perform research on Digital Twin predictive analytics for connected vehicles. Analyze vehicle driving data set and predict vehicle driver behaviors to improve safety guidance. Perform research on Digital Twin driver guidance and perception for connected vehicles. Develop a proof-of-concept of Cyber-physical ID of surrounding vehicles and provide guidance for drivers.

Required Qualifications:
- Experience with Machine Learning, Deep Learning, Numerical Methods
- Currently pursuing PhD in Electrical Engineering, Mechanical Engineering or Computer Science in the area of vehicular communication technologies
- Research and development experience of wireless communications in vehicular environments
- Familiarity with Microsoft Word, Excel, and PowerPoint
- Ability to engage in general research activities such as defining problems and issues to be addressed, finding and using research data, and being able to make recommendations and findings in writing and presentations
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- Must demonstrate a genuine interest in and willingness to work in the automotive / mobility industry post-graduation

Administrative Detail:
- Must be 18 years of age or older
- GPA of 3.0 or higher
- Must be currently enrolled in a full-time, accredited graduate degree program studying in one of the following disciplines or related fields:
  - **Computer Science, Electrical Engineering, Mechanical Engineering**
- Sponsorship for employment-based visas or other work authorization may be available for this intern position
- Must be open to relocation (Mountain View, CA) and have reliable transportation

Standard Benefits:

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Join Toyota for Engineering Experiential Learning Opportunity!

Intern – Edge Computing Prototype
Research & Development – InfoTech Network Division | Mountain View, CA

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Job Summary:
Toyota is seeking PhD students in Electrical Engineering, Mechanical Engineering or Computer Science in the area of vehicular communications technologies.

Objective:
Research on resource management, computation model and optimization/analysis method for edge computing framework. Develop the Research prototype systems to analyze / visualize the resource management methods and the formal methods for connected services.

Required Qualifications:
- Experience with optimization techniques, timing analysis for real-time and/or distributed systems
- Currently pursuing PhD in Electrical Engineering, Mechanical Engineering or Computer Science in the area of vehicular communication technologies
- Research and development experience of wireless communications in vehicular environments
- Familiarity with Microsoft Word, Excel, and PowerPoint
- Ability to engage in general research activities such as defining problems and issues to be addressed, finding and using research data, and being able to make recommendations and findings in writing and presentations
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Administrative Detail:
- Must be 18 years of age or older
- GPA of 3.0 or higher
- Must be currently enrolled in a full-time, accredited graduate degree program studying in one of the following disciplines or related fields:
  - **Computer Science, Electrical Engineering, Mechanical Engineering**
- Sponsorship for employment-based visas or other work authorization may be available for this intern position
- Must be open to relocation (Mountain View, CA) and have reliable transportation

Standard Benefits:
- Competitive wages
- Paid holidays
- Housing assistance for those that qualify

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Intern – Machine-Learning Based Driving Behavior Analysis
Research & Development – InfoTech Network Division | Mountain View, CA

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Job Summary:
Toyota is seeking PhD students in Electrical Engineering, Computer Science or Electrical and Computer Engineering (ECE) in the area of vehicular communications technologies.

Objective:
This position involves performing research on anomalous driving behavior detection and development on our vehicular platform in both the simulator and testbed. Research in the areas of machine learning (ML) with particular focus on deep learning (DL) and reinforcement learning (RL). Develop new ML/DL methods/solutions to identify anomalous driving behavior (e.g., aggressive driver) in vehicular domain. Implement the proposed methods/solutions in work-in-progress proof-of-concept system.

Required Qualifications:
- Expertise in deep learning (DL) and machine learning (ML)
- Publication record in ML and DL domain
- Programming skills in Python, C/C++
- Currently pursuing PhD in Electrical Engineering, Computer Science or Electrical and Computer Engineering (ECE)
- Familiarity with Microsoft Word, Excel, and PowerPoint
- Ability to engage in general research activities such as defining problems and issues to be addressed, finding and using research data, and being able to make recommendations and findings in writing and presentations
- Good planning, time management, decision-making and organizational skills, and ability to manage several tasks at once
- Well-developed interpersonal and communication skills, including ability to respond professionally in all types of situations, maintain confidentiality and exercise tact and good judgment in an international work environment
- Must demonstrate a genuine interest in and willingness to work in the automotive / mobility industry post-graduation

Preferred Qualifications:
- Experience on programming for computer vision is a plus

Administrative Detail:
- Must be 18 years of age or older
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- Must be currently enrolled in a full-time, accredited graduate degree program studying in one of the following disciplines or related fields:
    - **Electrical Engineering, Computer Science or Electrical and Computer Engineering (ECE)**

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Standard Benefits:

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Intern – Predictions of Infrastructure Resources
Research & Development – InfoTech Network Division | Mountain View, CA

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Job Summary:
Toyota is seeking PhD students in Computer Science or related field in the area of vehicular communications technologies.

Objective:
Research and explore deep learning-based Infrastructure (Cloud) resource management or performance improvement in automobile Big Data use cases. Experiment, evaluate and analyze the performance of proposed schemes through proof-of-concept or numerical simulation. Publish research results in top venues and file patents.

Required Qualifications:
- Ph.D. student working on deep learning (DL) and statistical machine learning (ML) for infrastructure resource prediction or performance improvement problems.
- Solid programming skill in Tensorflow, PyTorch or comparable machine learning frameworks
- Experience with designing, developing and testing machine learning algorithms
- Currently pursuing PhD in Computer Science or related field in the area of vehicular communication technologies
- Research and development experience of wireless communications in vehicular environments
- Familiarity with Microsoft Word, Excel, and PowerPoint
- Ability to engage in general research activities such as defining problems and issues to be addressed, finding and using research data, and being able to make recommendations and findings in writing and presentations
- Good planning, time management, decision-making and organizational skills, and ability to manage several tasks at once
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- Must demonstrate a genuine interest in and willingness to work in the automotive / mobility industry post-graduation

Preferred Qualifications:
- Experience of proof-of-concept prototyping for Infrastructure or storage
- Basic knowledge of hardware for Datacenter, Public Cloud or Multi-Clouds
- Hands-on rack & stack small lab will be plus

Administrative Detail:
- Must be 18 years of age or older
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Intern – Vehicular Perception with Advanced Deep Learning
Research & Development – InfoTech Network Division | Mountain View, CA

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Job Summary:
Toyota is seeking PhD students in Electrical Engineering, Computer Science or Electrical and Computer Engineering (ECE) in the area of vehicular communications technologies.

Objective:
This position involves performing research in the perception stack development of our vehicular platform in both the simulator and testbed. Research and explore deep learning-based depth perception. Develop object detection, tracking and distance sensing from monocular camera system. Work with the engineering team for model deployment in the vehicular platform.

Required Qualifications:
- Ph.D. student working on deep learning-based depth perception
- Solid programming skill in PyTorch, Tensorflow or comparable machine learning frameworks
- Prior experience on GAN based neural network design and application
- Currently pursuing PhD in Electrical Engineering, Computer Science or Electrical and Computer Engineering (ECE)
- Familiarity with Microsoft Word, Excel, and PowerPoint
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Preferred Qualifications:
- Experienced in ROS is a plus

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