

# Zhe HUANG

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## EDUCATION BACKGROUND

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09/2019–06/2024 (Expected)	<b>University of Illinois at Urbana-Champaign (UIUC)</b> <i>Ph.D. in Electrical and Computer Engineering</i> <b>GPA:</b> 4.00/4.00
09/2017–06/2019	<b>Stanford University</b> <i>M.S. in Mechanical Engineering</i> <b>GPA:</b> 4.00/4.00
09/2013–07/2017	<b>Xi'an Jiaotong University (XJTU)</b> <i>B.Eng. in Energy and Power Engineering, Honors Engineering Program, Qian Xuesen Class</i> <b>GPA:</b> 4.00/4.00 <b>Rank:</b> 2/62

## INTERNSHIP EXPERIENCES

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<b>Intelligence on the Cloud and at the Edge</b>	<b>04/19-06/19</b>
<i>Big Data and IoT Team, Schlumberger Software Technology &amp; Innovation Center</i>	<i>Position: Digital Technology Intern Advisors: Bernard Van Haecke, Crispin Chatar</i>
<ul style="list-style-type: none"><li>Cloud-wise: Developed Drake the Driller, i.e. a voice interface for drilling systems, based on a Dialogflow NLP agent and Google Cloud services. Demonstrated Drake the Driller on a drilling rig model running in the real world, which is able to notify the user of equipment limitations, help retrieve monitoring data stored at the cloud database, learn novel terminology from users during runtime, and handle emergency automatically without human interference. Our publication received the highest rating in the innovative technologies session.</li><li>Edge-wise: Trained decision tree models on a machine learning chip integrated with accelerometer and gyroscope for drilling pattern recognition and fault diagnosis. Conducted the parametric study on sampling rate and time window of vibration data, and achieved 98% classification accuracy during the test.</li></ul>	

## RESEARCH EXPERIENCES

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<b>Intention-aware Pedestrian Trajectory Prediction</b>	<b>07/19-11/20</b>
<i>Human-Centered Autonomy Lab, UIUC</i>	<i>Advisor: Prof. Katherine Driggs-Campbell</i>
<ul style="list-style-type: none"><li>Presented a novel framework to simultaneously estimate pedestrian intentions and generate multi-modal long-term trajectory prediction with a flexible sampling strategy.</li><li>Proposed a Mutable Intention Filter to perform robust intention estimation, and introduced a Warp LSTM to predict offsets on an intention-aware nominal prediction to capture pedestrian behavior over long time horizons.</li><li>Applied a bidirectional structure across both observation and prediction period to propagate physical intention information through the whole trajectory.</li></ul>	
<b>Soft Robot-driven Radio Frequency Electromagnetic Platform</b>	<b>09/17-12/17</b>
<i>Collaborative Haptics and Robotics in Medicine Lab, Stanford University</i>	<i>Advisor: Prof. Allison Okamura</i>
<ul style="list-style-type: none"><li>Developed a prototype of reconfigurable antenna based on the vine robot, a soft robot whose compact features and varied helical shape are ideal for satellite communication applications</li><li>Introduced a cross actuator design that enables the change of the antenna's signal transmission directions, and integrated separate conductor design on actuators that activates the antenna when the helix shape is formed.</li></ul>	

## PUBLICATIONS

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- Huang, Z.**, Hasan, A., Shin, K., Li, R., & Driggs-Campbell, K. (2021). Long-Term Pedestrian Trajectory Prediction Using Mutable Intention Filter and Warp LSTM. *IEEE Robotics and Automation Letters*, 6(2), 542-549.
- Gan, L. T., Blumenschein, L. H., **Huang, Z.**, Okamura, A. M., Hawkes, E. W., & Fan, J. A. (2020). 3D Electromagnetic Reconfiguration Enabled by Soft Continuum Robots. *IEEE Robotics and Automation Letters*, 5(2), 1704-1711.
- Chatar, C., **Huang, Z.**, & Hadrovic, P. (2020). A Voice Interface for Drilling Systems. In *IADC/SPE International Drilling Conference and Exhibition*. Society of Petroleum Engineers.
- Du, P., **Huang, Z.**, Liu, T., Xu, K., Gao, Q., Sibai, H., Driggs-Campbell, K., & Mitra, S. (2019). Online monitoring for safe pedestrian- vehicle interactions. *IEEE International Conference on Intelligent Transportation Systems (ITSC)*.