Shengbin Wang
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Education

- **Georgia Institute of Technology** — Atlanta, GA
  Master of Science in Computer Science; — *Jan. 2021 – present*
  - Relevant coursework: Data and Visual Analytics, Artificial Intelligence for Robotics, Machine Learning, Artificial Intelligence
- **University of Houston** — Houston, TX
  PhD. in Mechanical Engineering; — *Aug. 2018 – present*
- **HeFei University of Technology** — Hefei, China
  Master of Science in Mechanical Engineering; — *Sep. 2015 – May. 2018*
- **Huazhong Agricultural University** — Wuhan, China
  Bachelor of Engineering in Mechanical Engineering; — *Sep. 2011 – July. 2015*

Experience

- **Rare Event Classification in Multivariate Time Series** — Houston, TX
  Research Assistant, University of Houston, Advisor: Prof. Ying Lin — *Aug. 2018 - May. 2019*
  - Used RuleFit to discover the hidden rules that may be predictive of the break event.
  - Built a predictive model based on the 18,398 records, generated 710 factors with 61 variables, that come from statistical summarizations, progression trajectories, and non-random longitudinal patterns.
  - Combined Word2Vec to generate contextual embeddings from each source and Procrustes to fuse different vector models into one common space by using a list of corresponding pairs as anchor points.
- **Soft jellyfish robot enabled by Dielectric Elastomer material** — Houston, TX
  Research Assistant, University of Houston, Advisor: Prof. Zheng Chen — *May. 2019 - Present*
  - Designed artificial neural network(ANN) model to explore the displacement of DE tube actuator with the other variables, such as resistance, current and capacitance.
  - Developed an online learning framework for large-scale data processing. With online learning, the model avoids putting data into memory altogether and fits well with the actual data got from laser sensor

Projects

- **Meteorites Project : track a collection of falling meteorites**
  - Constructed functions to inform the turret of the latest meteorite measurements and sets up the Kalman Filter to predict the meteorites' locations at future timesteps.
  - Predicted the locations of meteorites in the time step after the latest observation.
  - Created a function to return the change in the laser turret's aim angle.
- **Warehouse Project: build a planner that helps a robot find the best path through a warehouse to a single box that it has to pick up and deliver to a dropzone**
  - Deployed dynamic programming approach to solve the problem that the robot may "wake up" at any point in the warehouse and be tasked with retrieving the box and delivering it to the dropzone.
- **Proportional-Integral-Derivative (PID) controller**
  - Built a PD controller to maintain the fuel mixture pressure supplied by the rocket's turbopumps, which can make adjustments to the pump's output in order to meet pressure demands.
  - Built a PID controller for controlling a rocket launch and reentry, which can maintain two specific velocity profiles through different atmospheric flight regimes as parameters such as thrust, weight, and air drag change over the time of flight.
- **Gem Finder Project: build a robot control system that uses it to navigate through a world.**
  - Utilized a SLAM system that can keep track of where your robot is located after a series of movements.
  - Implemented a function to navigate the robot around the environment to extract gems provided to me in a list.

Programming Skills

- **Languages**: Python, Java, R, Matlab, JavaScript, SQL, HTML, CSS, JSON **Technologies**: AWS, Git, Docker,PySpark, Pandas