XIAOZHENG (JUDY) XU

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EDUCATION

UNIVERSITY OF TORONTO, Toronto, ON   July 2020
Master of Applied Science in Aerospace Engineering at UTIAS Space Flight Laboratory (SFL)
Thesis topic: Telemetry System and Autonomous Fault Detection for Micro-satellite Operations.
Relevant courses: State Estimation, Intro to Machine Learning, Knowledge Representation and Reasoning.

OLIN COLLEGE OF ENGINEERING, Needham, MA   May 2018
Robotics Engineering, GPA 3.83/4.
Relevant courses: Computer Architecture, Computational Robotics, Software Design, Data Structures.

WORK EXPERIENCE

Master Student, **SFL**, Toronto   Aug 2018 - present
- **Operate** and develop operation tools for **BRITE-Toronto**, a scientific micro-satellite part of a constellation that observes bright stars.
- Developed and performed **Integration Functional Testing** for **GHGSat-C1**, a micro-satellite to observe green house gas emissions. Operated GHGSat-C1 during **Thermal and Vacuum Testing**.
- Update and expand **flight software** for GHGSat-C1.
- Designed and implemented an I**ntegrated Telemetry System** with PostgreSQL database, slim framework backend and custom plugins for visualization tool Grafana.
- Apply and Evaluate machine learning techniques to **monitor anomalies in telemetry data**.

Software Engineering Intern at **Google,** Mountain View, CA   June-Aug 2017
With **Daydream (Google VR):**
- Worked on creating an html report for computing metrics and visualizing results.
- Collected and processed data from real time measurement system.

Summer Undergrad Research Position (SURP), Toronto, ON   May-Aug 2016
Under the direction of **Prof. Ue-Li Pen** at **Canadian Institute for Theoretical Astrophysics:**
- Used Python and Linux to process signals at different radio telescopes around the world.
- Found that the crab's enigmatic pulses might be emitted from regions separated more than 500km in the pulsar's magnetosphere.

PROJECTS

State Estimation   Fall 2018
- Applied Extended Kaman Filter and batch filter to determine attitude of micro-satellite from multiple sensors, compared performance on real and simulated data from SFL missions.

Computational Robotics   Spring 2017
- Implemented a working Extended Kalman Filter with Neatos Odometry and IMU data.

Controls   Fall 2016
- Built and analyzed an inverted pendulum and magnetic levitation using circuits without sensors.

Software Design   Spring 2016
- Designed and implemented an Interactive Calculus app using python and open CV.

User Oriented Collaborative Design   Spring 2016
- Interviewed minimalists to collaboratively design a grocery store for them.

Principles of Engineering   Fall 2015
- Designed, prototyped and fabricated Azimuth, a table top robot that fetches salt and pepper.

SKILLS

- **Programming and software:** Python, C, java, Matlab, php, Javascript, SQL, Linux, ROS, prolog
- **CAD and Rapid Prototyping:** Solidworks CSWA-certified, 3D printing, Laser cut
- **Languages:** English(bilingual), Mandarin(bilingual), French (advanced)
- **Machine Shop:** trained on mill, lathe, drills, saws and sanders