CURRICULUM VITAE

Name: Zhen Li
Gender: Male
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Academic Background

Education

- 2016.01-2019.03 **University College London**
  PhD in **Astrodynamics and Space Geodesy**
- 2012.09-2015.06 **Wuhan University**
  Master of Science in **Geodesy and Geomatics**
- 2008.09-2012.06 **Henan Polytechnic University**
  Bachelor of Science in **Geomatics Engineering**.

Work experience

- 2019.01-2020.01 **University College London**
  Research Associate
- 2017.06-2019.01 **University College London**
  Postgraduate Teaching Assistant
- 2015.09-2015.12 **RDRNSS Technology Group (Wuhan)**
  GNSS algorithm engineer

Research Techniques and Skills

- Programming with C/C++, Python, JavaScript, Java, and Fortran
- GNSS positioning algorithm and 3D modelling
- Mathematical Modelling & Statistical analysis.
- GAMIT and PANDA (GNSS data processing software)

Research experience

- In 2019, I participated in a US Air Force project named "Track and Custody at GEO" in collaboration with Applied Defense Solutions and University of Texas. We focused on the dynamics of GEO satellites.
- In 2017, I took part in a UK DSTL project "Integrators development" with the University of Liverpool. We focused on force models to test the integrators developed by University of Liverpool.
- From 2016 on, I took part in an ESA project "Solar radiation pressure modelling for long term satellite orbit prediction". My task is to build solar radiation pressure and Earth radiation pressure models to accurately predict the Galileo satellites' orbit.
- In 2015, I developed a set of Continuously Operating Reference Station (CORS) and Real Time Kinematic (RTK) software contracted with Space Star Technology Co. Ltd.
- In 2014, I took part in a project named "Signal processing system for BeiDou-3 experimental satellites". My task is to simulate observation data and assess the performance of atomic clocks, the simulated data includes GNSS data, inter-satellites ranging data for orbit determination, C band data, L band data for time synchronization and SLR data.

- In 2013, I put forward a method that can smooth the Received Signal Strength Indication (RSSI) in WiFi Positioning. Combining the equation of motion and Friis's transmission equation, I constructed a robust Kalman filter. Positioning tests with the filtered RSSI showed that the accuracy can be improved by 50%-60%.
- In 2012, I took part in the research "Absolute field calibration of GPS antenna PCV". My task is to develop the data processing software. Our facilities include an automatic robot (FANUC LR Mate 200ic), two Trimble Net R9 GNSS receivers, a rubidium atomic clock.

Honor & Awards

- 2016.01. Awarded the Dean's prize at UCL and support from China Scholarship Council.
- 2015.06. Outstanding Graduate award of Wuhan University.
- 2014.10 Outstanding student of "Xia Jianbai" scholarship in scientific innovation.
- 2013.12 The Second Prize in China Post-graduate Mathematical Contest in Modelling.
- 2013.09 Awarded advanced individual at graduate students' academic festival in School of Geodesy and Geomatics, Wuhan University.
- 2012.06 Outstanding graduate award of Henan Polytechnic University.
- 2011.12 Awarded first prize of Henan Province in China Undergraduate Mathematical Contest in Modelling.
- 2011.09 Awarded the National Scholarship.
- 2010.09 Awarded third prize of Henan Province in China Undergraduate Mathematical Contest in Modeling.
- 2009.09 Awarded the National Scholarship.

Papers

Li, Z., 2019. Space vehicle radiation pressure modelling: A demonstration on Galileo satellites in GNSS. PhD thesis, University College London.

Li, Z., Ziebart, M., Bhattarai, S., Harrison, D., Grey, S., 2018. Fast solar radiation pressure modelling with ray tracing and multiple reflections. Adv. Sp. Res. 61, 2352–2365. https://doi.org/10.1016/j.asr.2018.02.019 , Q2

Li, Z., Ziebart, M., Bhattarai, S., Harrison, D., 2018. A shadow function model based on perspective projection and atmospheric effect for satellites in eclipse. Adv. Sp. Res. https://doi.org/10.1016/j.asr.2018.10.027 , Q2

Li, Z., Ziebart, M., Grey, S., Bhattarai, S., 2017. Earth Radiation Pressure Modelling for BDS IGSO Satellites, in: China Satellite Navigation Conference. Shanghai, pp. 63–67.

Li, Z., Huang, J., 2016. WiFi Positioning Using Robust Filtering with RSSI. Geomatics Inf. Sci. Wuhan Univ. 41, 1–6. https://doi.org/10.13203/j.whugis20130095

Li, Z., 2015. Research on the key technology of data processing for precise local area GNSS augmentation service system. Master thesis, Wuhan University.

Li, Z., Tan, X., 2015. WiFi Matching Navigation Based on Least Square. J. Geomatics 40, 60–62. https://doi.org/10.14188/j.2095-6045.2015.03.016

Bhattarai, S., Ziebart, M., Allgeier, S., Springer, T., Harrison, D., Li, Z., 2019. Demonstrating developments in high-fidelity analytical radiation force modelling methods for spacecraft with a new model for GPS IIR, Journal of Geodesy.