Jingyao Su

Doctoral researcher, Institute of Geodesy(IfE), Leibniz University Hannover, Germany
Web: https://www.jingyao-su.com Email: suj@ife.uni-hannover.de
Linkedin, ResearchGate, ORCID, Google Scholar Tel.: +49-511-762-4542

Education

- **Leibniz University Hannover** — Hannover, Germany
  Ph.D in Geodesy and Geoinformation — *Jul 2020 - Present*

  Research topic: *Bounding and propagating uncertainty with interval mathematics and alternative approach for GNSS integrity* (Prof. Steffen Schön).

- **Technical University of Munich** — Munich, Germany
  Master of Science in Earth Oriented Space Science and Technology (ESPACE) — *Oct 2017 - Jun 2020*

  Specification in satellite navigation. Thesis topic: *Precise point positioning with ambiguity resolution for different GNSS signals* (Dr. Bingbing Duan, Prof. Urs Hugentobler).

- **Helmholtz Centre Potsdam - GFZ German Research Centre for Geosciences** — Potsdam, Germany
  Visiting student at Section 1.1: Space Geodetic Techniques — *Jul 2018 - Aug 2018*

- **Wuhan University** — Wuhan, China
  Bachelor of Science in Geophysics — *Aug 2011 - Jun 2015*

Experience

- **Virginia Tech** — Blacksburg, VA, USA
  Visiting researcher at the Navigation laboratory for Autonomous Vehicle inTegrity (NAViTi) — *May 2023 - Present*

- **Leibniz University Hannover** — Hannover, Germany
  Doctoral researcher at Institute of Geodesy (IfE) — *Jul 2020 - Present*

  with the DFG research training group *Integrity and Collaboration in Dynamic Sensor Networks (i.c.sens)*

- **Robert Bosch Group** — Hildesheim, Germany
  R&D internship — *Apr 2019 - Oct 2019*

- **Technical University of Munich** — Munich, Germany
  Research assistant at Institute for Astronomical and Physical Geodesy (IAPG) — *Apr 2018 – Mar 2019*

- **Shenyang Institute for Geotechnical Investigation and Surveying** — Shenyang, China
  Geomatics engineer — *Aug 2015 – Aug 2017*

Honors and Awards

- **Best Student Presentation Award** at NAVITEC 2022, by European Space Agency (ESA) - Apr 2022.
- **Best Presentation Award** at ION GNSS+ 2021, by Institute of Navigation (ION) - Sep 2021.
- **Copernicus Masters 2018** - Top 3 finalist of University Challenge, by AZO Anwendungszentrum on behalf of the European Space Agency (ESA) - Oct 2018
- **Zetai Cup National Student Paper Competition in Geodesy** - First prize, by Education Commision, Chinese Society for Surveying and Mapping - Dec 2014
- **Wang Zhizhuo Innovative Talent Scholarship** by Wuhan University - Nov 2014

Professional Membership

student member of IEEE, member of the Society for Imprecise Probabilities (SIPTA)

Professional Skills

- **Languages**: Chinese (*mother tongue*), English (*proficient in both writing and speaking*), German (*daily usage*)
- **Programming**: MATLAB, Python, C/C++, Fortran, Perl

Public Services

- **Scientific experiment organizer**: organized and involved in the measurement campaigns (i.c.sens mapathons) with multi-sensors and multi-vehicles (GNSS, IMU, UWB, LiDAR, Mobile Mapping System, Laser Tracker). https://doi.org/10.25835/75o9yrc0. (Dec 2021)
- **Workshop organizer and session chair**:
  - *IEEE Symposium of Intelligent Vehicles (IEEE-IV 2022)*, the 1st iLoc workshop *High-integrity Localization for Autonomous Vehicles*, Aachen, Germany. (Jun 2022)
  - *IEEE International Conference on Intelligent Transportation Systems (IEEE-ITSC 2023)*, the 2nd iLoc workshop *High-integrity Localization for Autonomous Vehicles*, Bilbao, Spain. (planned Sep 2023)
- **Supervision of master students**:

  Master thesis:
  - Elesawy, M. (2022). Characterizing the ionospheric behaviour for continental network RTK services over Europe.

  Research Project (in German: Studienarbeit) for the master program *Mechanics and robotics*:
  - Xue, F. (2023). Overbounding IMU error for trustworthy inertial navigation.

  Master course:
  - Advanced Presentation Seminar (in German: Hauptseminar) for the master program *Geodesy and geoinformation*
  - Exercise in Advanced Concepts for Positioning and Navigation for the master program *Geodesy and geoinformation*

Peer-Reviewd Publications

- **Su, J.**, Schön, S. & Joerger, M. (2023). Towards a set-based detector for GNSS integrity monitoring. Accepted by *IEEE/ION Position Location and Navigation Symposium 2023*.
- Axmann, J., Moftizadeh, R., **Su, J.**, Tennstedt, B., Zou, Q., Yuan, Y., Ernst, D., Alkhatib, H. & Schön, S. (2023). LUCOOP: Leibniz University Cooperative Perception and Urban Navigation Dataset. Accepted by *2023 IEEE Intelligent Vehicles Symposium (IV)*.
- **Su, J.**, & Schön, S. (2022). Bounding the residual tropospheric error by interval analysis. In *International Association of Geodesy Symposia*. Springer, Berlin, Heidelberg.
- **Su, J.**, & Schön, S. (2022). Advances in deterministic approaches for bounding uncertainty and integrity monitoring of autonomous navigation. accepted by *ION GNSS+ 2022*.
- Schön, S., Baasch, K. N., Icking, L., KarimiDoona, A., Lin, Q., Ruwisch, F., Schaper, A. & **Su, J.** (2022, June). Towards Integrity for GNSS-based urban navigation–challenges and lessons learned. In *2022 IEEE Intelligent Vehicles Symposium (IV)* (pp. 1774-1781). IEEE.
- **Su, J.**, & Schön, S. (2022). Deterministic approaches for bounding GNSS uncertainty: A comparative analysis. In *2022 10th Workshop on Satellite Navigation Technology (NAVITEC)* (pp. 1-8). IEEE.
- **Su, J.**, & Schön, S. (2021). Improved Observation Interval Bounding for Multi-GNSS Integrity Monitoring in Urban Navigation. In *Proceedings of the 34th International Technical Meeting of the Satellite Division of The Institute of Navigation (ION GNSS+ 2021)* (pp. 4141-4156).

Selected Talks/Presentations

- Intervals in fault-free error modeling for GNSS applications. (Oct 2022). In *International Online Seminar on Interval Methods in Control Engineering*. Online.
- How to determine uncertainty interval: Practice in GNSS and LiDAR localization. (Jul 2022). In *13th Summer Workshop on Interval Methods (SWIM)*. Hannover, Germany.
- Deterministic approaches for bounding GNSS uncertainty: A comparative analysis. (Jun 2022). In *1st iLoc workshop on High-integrity Localization for Autonomous Vehicles, 33rd IEEE Intelligent Vehicles Symposium*. Aachen, Germany.
- Improved observation interval bounding for GNSS integrity monitoring. (Oct 2021). In *DGK PhD Seminar Engineering Geodesy Division*. Hannover, Germany.
- On the geometrical constraints for interval-based GNSS positioning. (Sep 2021). In *Frontiers of Geodetic Science (FROGS) 2021*. Hannover, Germany.
- Bounding the residual tropospheric error by interval analysis. (Jul. 2021). In *IAG 2021-Scientific Assembly of the International Association of Geodesy*. Beijing, China.