Rongbing Xu

PhD Student · University of Waterloo

295 Phillip St, Waterloo, ON N2L 3W8

rongbing.xu@uwaterloo.ca | rongbingxu.com | xrb936

Education

University of Waterloo — *Waterloo, ON, Canada*

Ph.D. in Systems Design Engineering (Aeronautics) — *2024-Present*

- Advisor: Dr. Shi Cao

University of Waterloo — *Waterloo, ON, Canada*

M.A.Sc. in Systems Design Engineering — *2019-2022*

- Advisor: Dr. Shi Cao

University of New Mexico — *Albuquerque, NM, USA*

B.Sc. in Computer Science — *2016-2019*

- Minors in Mathematics

Professional Experience

2024-present	**Graduate Teaching Assistant**, University of Waterloo
2022-2024	**Research Assistant**, University of Waterloo
2019-2022	**Graduate Teaching Assistant**, University of Waterloo

Publications

Published

Rongbing Xu, Shi Cao, Suzanne K. Kearns, Ewa Niechwiej-Szwedo, and Elizabeth Irving. 2024. Computational cognitive modeling of pilot performance in pre-flight and take-off procedures. Journal of Aviation/Aerospace Education & Research, 33(4), 2.

Rongbing Xu, Shi Cao. 2021. Modeling pilot flight performance in a cognitive architecture: model demonstration. Proceedings of the Human Factors and Ergonomics Society Annual Meeting. Vol. 65. No. 1.

Master Thesis

Rongbing Xu. 2022. Modeling pilot flight performance on pre-flight and take-off tasks with a cognitive architecture. UWSpace. http://hdl.handle.net/10012/18174

Awards, Fellowships, & Grants

2016-2019 **International Amigo Scholarship**, University of New Mexico

Presentations

Contributed Presentations

Rongbing Xu, Shi Cao, Suzanne Kearns, Ewa Niechwiej-Szwedo, Elizabeth Irving. 2024. A Cognitive Modelling Approach to Pilot Performance Simulation. Poster: Sustainable Aeronautics Summit 2024.

Rongbing Xu. 2024. Enhancing Pilot Training with Cognitive Modeling and Machine Learning. Oral presentation: Human Factors and Ergonomics Inter-University Workshop 2024.

Rongbing Xu, Shi Cao, Ewa Niechwiej-Szwedo, Elizabeth Irving, and John Munoz. 2023. Data Platform and Information Technologies Transforming General Aviation Pilot Training. Poster: Sustainable Aeronautics Summit 2023.

Rongbing Xu. 2022. Modeling Pilot Flight Performance on Take-off Task with QN-ACTR. Oral presentation: Virtual MathPsych/ICCM 2022.

Rongbing Xu and Shi Cao. 2021. Modeling Pilot Flight Performance in a Cognitive Architecture: Model Demonstration. Oral presentation: Human Factors and Ergonomics Society 65th Annual Meeting.

Teaching Experience

Fall 2024	**Cognitive Ergonomics**, Teaching Assistant, University of Waterloo
Winter 2021	**Data Structures and Algorithms**, Teaching Assistant, University of Waterloo
Fall 2021	**Elementary Engineering Mathematics**, Teaching Assistant, University of Waterloo
Spring 2021	**Data Structures and Algorithms**, Teaching Assistant, University of Waterloo
Winter 2021	**Optimization and Numerical Methods**, Teaching Assistant, University of Waterloo
Fall 2020	**Data Structures and Algorithms**, Teaching Assistant, University of Waterloo

Research Experience

University of Waterloo - Department of System Design Engineering *Waterloo, ON, Canada*

Advisor: Dr. Shi Cao *2024 - Present*

- Enhancing Pilot Training and Performance Evaluation: A Data-Driven Approach through Computational Cognitive Model and Machine Learning

Waterloo Institute of Sustainable Aeronautics *Waterloo, ON, Canada*

Advisor: Dr. Shi Cao *2022 - 2024*

- Data Platform and Information Technologies Transforming General Aviation Pilot Training

Mitacs *Waterloo, ON, Canada*

Advisor: Dr. Shi Cao *2021*

- Operator Space Situation Awareness in Space Object Tracking Tasks

University of Waterloo - Department of System Design Engineering *Waterloo, ON, Canada*

Advisor: Dr. Shi Cao *2019-2022*

- Modeling Pilot Flight Performance on Pre-flight and Take-off Tasks with A Cognitive Architecture

Outreach & Professional Development

Peer Review

Reviewer of *IEEE Transactions on Human-Machine Systems*
Reviewer of *Human Factors and Ergonomics Society 65th International Annual Meeting*

Professional Memberships

Student Affiliate of *Human Factors and Ergonomics Society*
Graduate Student Member of *Institute of Electrical and Electronics Engineers*