Rongbing (Robin) Xu

Date of birth: 28/01/1996   **Address:** 350 Bridle Path Court, Waterloo N2L 6A3, Canada
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Education

Systems Design Engineering | M.A.Sc.
University of Waterloo

 09/2019 – 04/2022   WATERLOO, CANADA

- Conducted comprehensive human factors research that identified key safety issues within aviation systems and provided recommendations for improving aviation safety protocols.
- Collaborated with a team of other students and researchers to design and build two models in a cognitive architecture to simulate pilot flight performance during pre-flight and take-off tasks, resulting in a demonstration of the capability and advantage of this theory-driven modeling approach for supporting general aviation pilot training.
- Successfully completed coursework in systems design, human-computer interaction, and cognitive engineering, demonstrating a strong understanding of the key principles and theories that underpin human factors in aviation.

Computer Science | B.S.
University of New Mexico

 09/2016 – 05/2019   ALBUQUERQUE, UNITED STATES

- Developed and implemented a complex software program as part of a team project, resulting in improved efficiency and streamlined data management processes.
- Actively participated in the computer science club, organizing and leading coding workshops for fellow students, fostering a collaborative learning environment, and enhancing coding proficiency among peers.
- Completed a Bachelor's degree in Computer Science with a minor in mathematics, demonstrating proficiency in programming languages such as Java, Python, and C++.

Research and Professional Experience

Research Assistant
University of Waterloo

 04/2022 – 05/2024   WATERLOO, CANADA

- Built machine learning and cognitive models to analyze the collected flight and human performance data.
- Built and maintained a comprehensive database and dashboard for efficient data management.
- Published reports and academic publications based on research findings.
- Conducted literature reviews and analyzed relevant scientific research.
- Supervised co-op students, managed and maintained lab hardware devices, and provided technical support to assist researchers.

Research Assistant (Intern)
Mitacs

 04/2021 – 12/2021   WATERLOO, CANADA

- Conducted extensive research on Space Situational Awareness, collecting and analyzing scientific literature to write a comprehensive literature review.
- Interviewed industry experts to obtain insights and information about the field of Space Situational Awareness.
- Utilized analytical skills to analyze data and information obtained from research and expert interviews.
- Developed a cognitive model to evaluate the design of existing software and hardware used in Space Situational Awareness.
- Demonstrated expertise in evaluating and improving software and hardware design in the Space Situational Awareness area.

Teachine Assistant
University of Waterloo

 04/2020 – 04/2022   WATERLOO, CANADA

- Tutored three undergraduate courses: Discrete Mathematics, Data Structures and Algorithms, and Optimization and Numerical Methods, assisted the lead teacher in developing and implementing engaging lesson plans,

Research and Professional Experience

resulting in improved student engagement and participation by 30%.

- Provided one-on-one support to students with special needs, successfully helping them overcome learning obstacles and achieve academic goals.
- Effectively managed classroom behavior by implementing various engagement strategies, resulting in a 25% decrease in disruptive incidents.
- Collaborated with teaching staff to develop and implement an assignment management system using Python for grading assignments efficiently, resulting in increased academic progress and achievement.

Publications

📅 07/2024

Computational Cognitive Modeling of Pilot Performance in Pre-flight and Take-off Procedures
Journal of Aviation/Aerospace Education & Research (Accepted)
Rongbing Xu, Shi Cao, Suzanne Kearns, Ewa Niechwiej-Szwedo, and Elizabeth Irving

📅 04/2022

Modeling Pilot Flight Performance on Pre-flight and Take-off Tasks with A Cognitive Architecture
UWSpace, University of Waterloo
http://hdl.handle.net/10012/18174
Rongbing Xu

📅 11/2021

Modeling Pilot Flight Performance in a Cognitive Architecture: Model Demonstration.
Proceedings of the Human Factors and Ergonomics Society Annual Meeting. Vol. 65. No. 1.
https://doi.org/10.1177/1071181321651008
Rongbing Xu and Shi Cao

Conference and Presentations

📅 07/2022

Modeling Pilot Flight Performance on Take-off Task with QN-ACTR.
Virtual MathPsych/ICCM 2022

📅 11/2021

Modeling Pilot Flight Performance in a Cognitive Architecture: Model Demonstration.
The 65th Annual Meeting of the Human Factors and Ergonomics Society

Service and Contributions

📅 2024

Reviewer
IEEE Transactions on Human-Machine Systems