Graduate Research Assistant Opportunities at the University of Minnesota
Remote Sensing and Hydrology

Our research team at the Saint Anthony Falls Laboratory, Department of Civil, Environmental, and Geo-Engineering at the University of Minnesota is seeking highly motivated and talented graduate research assistants for our PhD program. Our department is at the forefront of cutting-edge research, and we invite applications from individuals passionate about making significant contributions to the following research areas:

1. **Remote Sensing of Precipitation Using Satellite Data**
   Explore advanced machine and deep learning methodologies for monitoring and analyzing precipitation patterns globally. This research aims to use the constellation of satellites to expand our understanding of when, where, and to what precipitation phase is changing from snow to rain due to global warming.

2. **Microwave Remote Sensing of Soil-Snow-Vegetation Continuum Over Arctic Regions**
   Investigate the radiometric interactions between soil, snow, and vegetation in Arctic regions using microwave remote sensing technologies through numerical and experimental approaches. This research aims to enhance our understanding of the changes in the Arctic landscape due to global warming and its impact on the global Carbon cycle.

3. **Water Quantity and Quality Projection for River and Lake Systems Under Climate Change**
   Address the critical challenges posed by climate change on hydrologic systems in the Midwest United States. This research focuses on developing predictive models to expand our understanding of future changes in water quantity and quality in river and lake systems, helping to inform sustainable water management practices and policies.

**Qualifications:**

- A Bachelor’s or Master’s degree in Civil Engineering, Environmental Engineering, Earth and Atmospheric Science, Remote Sensing, or a related field.
- Strong analytical and problem-solving skills.
- Proficiency in programming languages (e.g., Python, MATLAB) and experience with data analysis and physically-based hydrology and water quality models.
- Excellent written and verbal communication skills.
- Prior research experience in the relevant fields is highly desirable.

**Benefits:**

- Competitive stipend and full tuition and health insurance coverage.
- Opportunities for professional development and networking through attending annual conferences upon satisfactory research progress.
• Access to state-of-the-art research facilities and resources at the Saint Anthony Falls Laboratory.
• Collaboration with leading experts and participation in groundbreaking research projects.

**How to Apply:** Interested candidates should submit the following documents:

• A detailed CV.
• Academic transcripts.
• Contact information for three references.
• TOEFL/IELTS and GRE quantitative scores are needed for international students with no previous publications in reputable journals of the field.

Applications should be submitted via email to Dr. Ardeshir Ebtehaj with the subject line “Graduate Research Assistant Application – [Your Area of Interest].”

**Application Deadline:** The admissions are for Spring 2025.

Join us at the University of Minnesota and contribute to impactful research that addresses some of the most pressing environmental challenges of our time. We look forward to your application!

**Contact Information:**

Hydrologic Sciences and Remote Sensing Lab.
Saint Anthony Falls Laboratory,
Department of Civil and Environmental Engineering
University of Minnesota
e-mail: ebtehaj@umn.edu
Website: https://www.hydsens.com/